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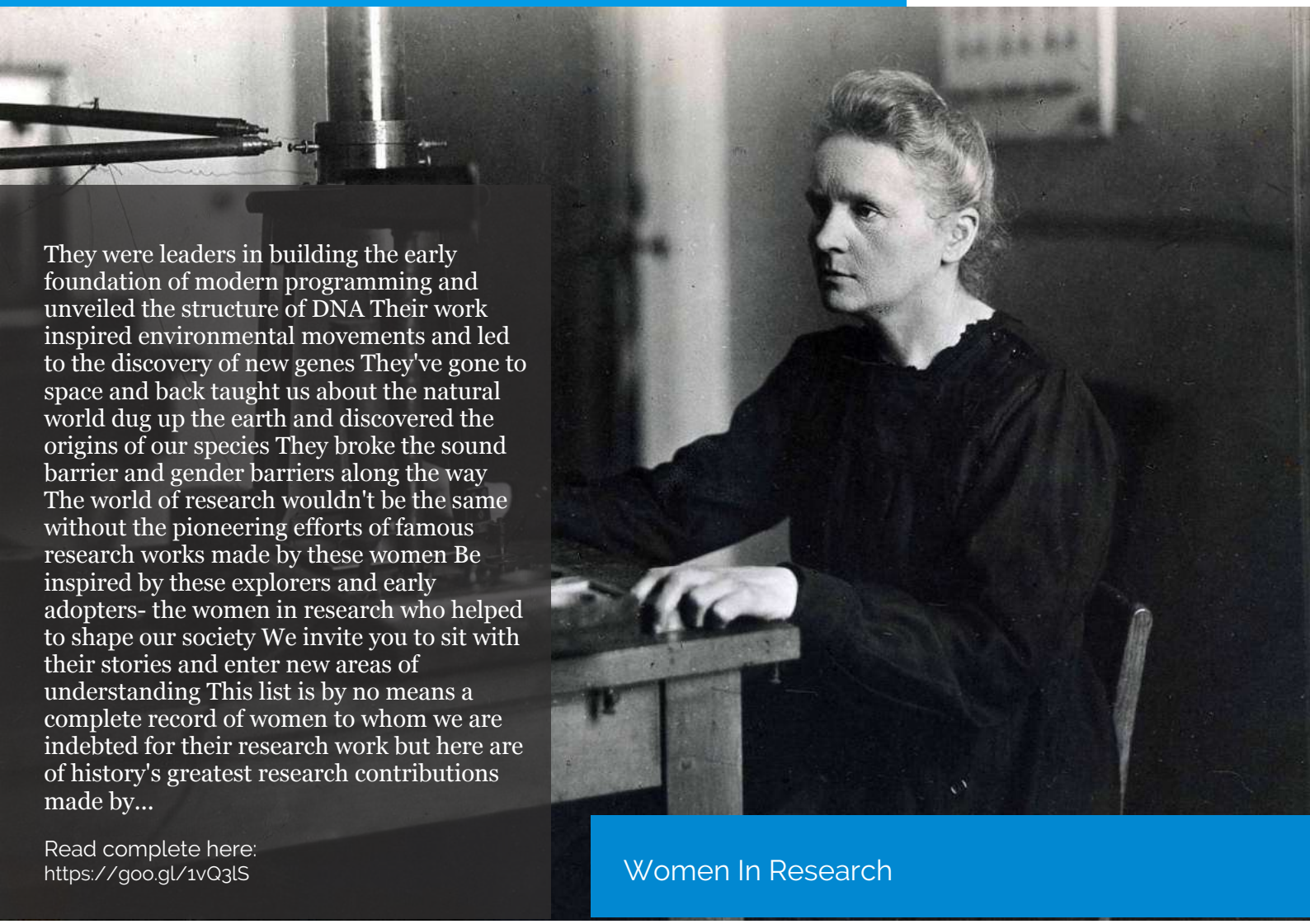

They were leaders in building the early foundation of modern programming and unveiled the structure of DNA Their work inspired environmental movements and led to the discovery of new genes They've gone to space and back taught us about the natural world dug up the earth and discovered the origins of our species They broke the sound barrier and gender barriers along the way The world of research wouldn't be the same without the pioneering efforts of famous research works made by these women Be inspired by these explorers and early adopters- the women in research who helped to shape our society We invite you to sit with their stories and enter new areas of understanding This list is by no means a complete record of women to whom we are indebted for their research work but here are of history's greatest research contributions made by...

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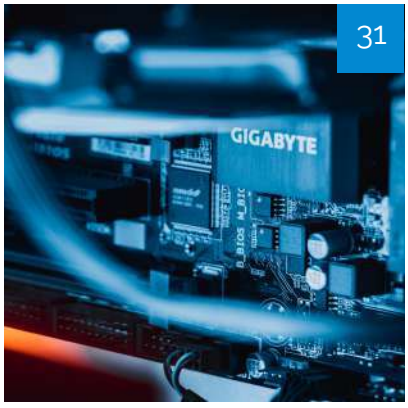

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Study About the Feasibility of Totally Extraperitoneal Single-Incision Laparoscopic Surgery Via Umbilical Margin Incision Under the Posterior Rectus Abdominis Sheath

Xiaojun Wang, Ting Fei & Encheng Zhou

Ningbo University

ABSTRACT

Purpose: To evaluate the feasibility of SILS-TEP surgery via umbilical margin incision under the posterior rectus abdominis sheath.

Methods: A single 2.5-cm-long curved incision was made along the lower umbilical border. A 4 cm gap under the posterior rectus abdominis sheath was created. The silica gel sealing sleeve of an Iconport single-port device was wedged under the posterior rectus abdominis sheath. The peritoneum was pressed down by the laparoscopic instrument to maintain tension, and the preperitoneal space was broadened towards the lower abdomen. Conventional laparoscopic instruments were used to complete the operation according to the procedure for laparoscopic totally extraperitoneal herniorrhaphy.

Keywords: custom-made single-port device; Iconport; single-incision laparoscopic surgery (SILS); totally extraperitoneal herniorrhaphy (TEP).

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ABSTRACT

Purpose: To evaluate the feasibility of SILS-TEP surgery via umbilical margin incision under the posterior rectus abdominis sheath.

Methods: A single 2.5-cm-long curved incision was made along the lower umbilical border. A 4 cm gap under the posterior rectus abdominis sheath was created. The silica gel sealing sleeve of an Iconport single-port device was wedged under the posterior rectus abdominis sheath. The peritoneum was pressed down by the laparoscopic instrument to maintain tension, and the preperitoneal space was broadened towards the lower abdomen. Conventional laparoscopic instruments were used to complete the operation according to the procedure for laparoscopic totally extraperitoneal herniorrhaphy.

Results: SILS-TEP hernia repair was successfully completed in 102 patients. The mean operative times were 70.5 minutes (range, 40 to 130 minutes) and 52.8 minutes (range, 36 to 90 minutes) for unilateral indirect hernia and unilateral direct femoral hernia, respectively. Four seroma cases were seen during the 1- to 32-month follow-up periods, and all were treated conservatively. No other major complications were observed. The mean postoperative hospital stay duration was 3.3 days.

Conclusions: With the assistance of a suitable single-port laparoscopic device, SILS-TEP operation via umbilical margin incision under the posterior rectus abdominis sheath is safe and feasible as well as easy to master and popularize.

Trial registration: The study was retrospectively registered with the Chinese Clinical Trial Registry (ChiCTR) (www.chictr.org.cn; registration number: ChiCTR1900023056; registration date: May 9, 2019).

Keywords: custom-made single-port device; Iconport; single-incision laparoscopic surgery (SILS); totally extraperitoneal herniorrhaphy (TEP).

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I. INTRODUCTION

Total external peritoneal (TEP) hernia repair is a common surgical method for indirect inguinal hernia, direct hernia and femoral hernia. Three operation holes are usually needed to complete the operation. The initial preperitoneal space is usually created in front of the posterior sheath of the rectus abdominis muscle on the side where the hernia is located and behind the muscle. The advantage of this method is its ability to reduce the probability of peritoneal damage during the initial stage. However, in the initial stage of TEP surgery, once peritoneal damage occurs, the operation will become difficult to perform, and sometimes TAPP surgery or surgical operation is required because the field of vision in front of the lens will be blocked after gas enters the anterior peritoneal space. In 2008, the first case of totally extraperitoneal single-incision laparoscopic surgery (SILS-TEP) was reported by Filipovic-Cugura J[1-2]. Over the past 10 years, SILS-TEP surgery has been promoted by many

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experts[3-16]. In 2022, the author[17] reported their early experience of SILS-TEP via umbilical margin incision under the posterior rectus abdominis sheath. The advantages and disadvantages of this method were further analysed.

II. MATERIALS AND METHODS

2.1 Materials

The principal author used a single-hole device named Iconport (Figs. 1 and 2) to seal the incisions and complete SILS-TEP via umbilical incision under the posterior rectus abdominis sheath. The Iconport single-hole device is composed of an operating panel made of medical polypropylene plastic and an incision protective sleeve made of medical silica gel.

2.2 Patients

We retrospectively analysed 102 patients who underwent SILS-TEP between 16 February 2019 and 15 June 2022 at the Affiliated Hospital of the Medical School of Ningbo University. All patients with an inguinal hernia admitted to our institute were considered for SILS-TEP hernioplasty. The exclusion criteria were as follows: (1) an age of <20 years, (2) an acute bowel-incarcerated hernia, (3) a previous history of retroperitoneal surgery, such as for a recurrent hernia after laparoscopic hernioplasty or prostatectomy, or (4) compromised cardiopulmonary function. In these cases, we performed open hernia repair. In this study, we analysed only short-term outcomes. All surgeries were performed after obtaining informed consent from the patients, and the study was approved by our Institutional Review Board.

3.3 Surgical technique

After general anaesthesia, the patient was placed in a supine position with the arm opposite the side of the hernia in adduction. In step 1, a skin incision was made. A single 2.5-cm-long curved incision was made along the lower umbilical border (Fig. 3). The subcutaneous tissue was incised to reveal the aponeurotic layer. In step 2, the operating space was created in the preperitoneal space behind the linea alba under direct vision. Usually, we use two vascular forceps to clamp the linea alba at a place 0.5 cm away from the root of the umbilical hole and lift it up. A small opening is cut horizontally between the two forceps so that the small blood vessel forceps enter the linea alba towards the direction of the symphysis pubis and gently expand the space. The linea alba was cut approximately 0.5-0.8 cm longitudinally, and the dissected aponeurosis tissue was pulled on both sides to create a 4 cm gap under the posterior rectus abdominis sheath, which was actually equivalent to making a "Y"-shaped incision around the root of the umbilical hole in the aponeurosis. In step 3, the silica gel incision seal sleeve of the single-hole device was installed below the aponeurotic layer of the incision (Fig. 4). The superficial tissue of the preperitoneal fascia was cut transversely along the deep surface of the aponeurosis using an electrocoagulation device, and the space in the preperitoneal space was gradually increased (Fig. 5). In step 4, the anterior peritoneal space adjacent to the umbilicus was enlarged. Under CO2 gas inflation, the preperitoneal space was dissected gradually using conventional straight and rigid types of laparoscopic instruments. If the peritoneum has been damaged during the initial operation, the surgeon can still identify the layers of the preperitoneal tissue because the forceps are pressing down on the peritoneum and the electric coagulation hook can be used to gradually widen the preperitoneal space (Fig. 6). In step 5, the preperitoneal space was expanded to expose the Retzius space. In step 6, the Bogros space was broadened. In step 7, the hernia sac was stripped (Fig. 7). In step 8, the mesh was placed. When we finished creating the preperitoneal space (Fig. 8), the entire myopectineal orifice was visualized, the hernia sac was visualized and freed from the spermatic cord, and a 12*14 cm polypropylene mesh (ETHICOH ULTRA PRO, Johnson, Norderstedt, Germany) was inserted and deployed to cover the entire myopectineal orifice (Fig. 9). Other meshes with the same function can also be used. No fixation is required for a flat mesh. In step 9, the incision was sutured and covered. The linea alba was closed intermittently with a 2-0 absorbable suture, and the skin was consecutively closed with a 4-0 absorbable suture

by subcuticular methods (Fig. 10). The strips were inserted into the umbilical hole to assist in pressing the incision, and a covering was applied to the incision.

IV. DATA COLLECTION

The age, sex, body mass index, American Society of Anaesthesiologists (ASA) score, site of hernia, operative time, bleeding volume, conversion, postoperative hospital stay duration, follow-up duration, complications, and hernia recurrence of the patients were recorded. The pain scores were checked 1 day after surgery by a member of the team using a visual analogue scale (VAS). Some patients were followed up with outpatient visits, while others were followed up with phone calls; for patients who could not be contacted by phone, the last follow-up findings were used in the analysis. The results were expressed as the means ± SDs or as numbers (percentages).

V. RESULTS

SILS-TEP hernia repair was successfully completed in 102 patients. The patient demographics and hernia characteristics are summarized in Table 1. The overall mean age of the patients was 59.7 years (range, 21 to 81 years), and the mean body mass index was 23.4 kg/m2 (range, 18.6 to 35.6 kg/m2). The operative and postoperative data are summarized in Table 2. The mean operative times were 70.5 minutes (range, 40 to 130 minutes) and 52.8 minutes (range, 36 to 90 minutes) for unilateral indirect hernia and for unilateral direct or femoral hernia, respectively. The mean operative time was 90.5 minutes (range, 60 to 180 minutes) for bilateral hernia. The mean operative pain VAS score on postoperative Day 1 was 1.8±0.8. Two patients experienced internal spermatic vessel injury, but there was no discomfort during the following 15 months. All of the surgical procedures were completed uneventfully, but peritoneal rupture occurred in 19 cases, and the distal indirect hernia sac was amputated in 6 cases. No other intraoperative complications existed. Four seromas were observed during the 1- to 32-month follow-up periods, and all were treated conservatively. No other major complications, such as chronic pain, mesh infection, testicular atrophy, umbilical hernia, delirium or urinary retention, were noted during the follow-up period. There was no mortality or recurrence. The mean postoperative hospital stay duration was 3.3 days.

VI. DISCUSSION

Due to the fusion of various layers of tissue on the deep surface of the umbilical foramen with the peritoneum, it is generally believed that it is not feasible to directly enter the posterior sheath of the rectus abdominis to create a preperitoneal space near the umbilical foramen to perform TEP surgery [1-16], which easily causes peritoneal damage. In October 2017, based on the previous umbilical incision experience of more than 200 cases of transumbilical single-hole laparoscopic appendectomy[18], the author made a preliminary conclusion that when an incision was made around the root of the umbilical hole, approximately 70-80% of the patients were below the aponeurosis layer, and the tissue composed of preperitoneal fat, preperitoneal fascia and peritoneum was thick and not easily damaged.

Only approximately 20-30% of patients have easily damaged peritoneum. Before 2016, the author's work content did not include the diagnosis and treatment of inguinal hernia. In 2017, the author began to learn laparoscopic hernia repair. Due to the lack of practical experience in membrane anatomy knowledge required by laparoscopic hernia repair at that time, the author did not independently complete any TEP surgery until October 2017. However, the author continued to use a self-developed laparoscopic single-incision sealing device (Product name: Iconport, Chinese patent No. 201110229309.4 US patent No.: US9, 393, 003B2) (Figure 1,2). Since November 2013, he has engaged in single-port laparoscopic surgery mainly using laparoscopic appendectomy and accumulated more experience using this device to complete single-port laparoscopic surgery. The author believes that it is feasible to perform SILS-TEP via umbilical margin incision under the posterior rectus abdominis sheath. First, by keeping the umbilical region away from the groin area and using the abdominal wall around the

navel that lacks any major blood vessels and nerves, beginners can create the preperitoneal space by entering directly into the skin incision at the lower edge of the umbilical foramen and under the posterior rectus abdominis sheath, similar to the operation of superficial mass surgery. For beginners, this method is safer and simpler than previous methods of creating the preperitoneal space. Second, TEP surgery is difficult due to peritoneal damage. However, the initial operation of single-hole TEP surgery through umbilical incision always compresses the peritoneum downwards through an operating instrument to provide tension. In this case, regardless of whether the peritoneum is damaged, the instrument is always pressing the peritoneum under the lens, and the field of vision in front of the lens is basically clear. Therefore, the expansion of the preperitoneal space can be carried out smoothly (Fig. 5 and 6). Third, the anterior peritoneal space under the posterior rectus abdominis sheath can be entered through the incision at the lower umbilical margin, and the operation can be carried out safely by expanding the space to the lower abdomen with the posterior sheath of the rectus abdominis as the anatomical mark. This method is simpler than the original three-hole method for TEP, which requires accurate identification of the anatomical layer of the membrane. Peritoneal damage easily occurs around the umbilical region far from the groin, but small peritoneal damage in the area not covered by hernia repair materials does not affect the quality of surgery. However, small peritoneal damage above the cover area of hernia repair materials has no significant impact on the quality of surgery. When there is a small peritoneal rupture, the surgeon knows to bring the separated layer closer to the superficial abdominal wall to avoid widespread peritoneal rupture. Fourth, the reason for the difficulty of single-port laparoscopic surgery is that the small incision limits the flexibility of the instrument. Any measures that are conducive to improving the flexibility of single-port laparoscopic instruments are of positive significance. The key point to limiting the flexibility of the device is the aponeurotic incision. The aponeurotic incision should be properly cut to 3-4 cm without affecting the appearance of the incision. The single-port laparoscopic operation under the posterior rectus abdominis sheath is much more flexible than operating the instrument in the anterior space of the posterior rectus sheath. Fifth, the purpose of the initial operation of TEP surgery is mainly to expand the anterior peritoneal space. The single-port laparoscopic surgical instrument enters the surgical field below the lens and presses down on the peritoneum, creating effective tension and facilitating spatial expansion. In this operation, only one instrument is moved, which alleviates the problem of interference between two instruments in the single-hole operation. Dissection of the hernia sac in the groin region requires frequent coordination of two instruments, which may be difficult but can be attempted by alternating among different orifices. Sixth, if the operation is difficult, TEP surgery can be completed by adding holes or TAPP surgery.

The initial umbilical incision is always needed, and the quality of the operation can be guaranteed. In October 2017, the author performed the first SILS-TEP via umbilical margin incision under the posterior rectus abdominis sheath with another doctor's assistant who also had no TEP operation experience. The operation went smoothly, and the recovery was good. Subsequently, all inguinal patients without surgery and anaesthesia contraindications underwent SILS-TEP via umbilical margin incision under the posterior rectus abdominis sheath, thus the clinicians accumulated early operational experience and gained some unfamiliar local anatomical knowledge. First, there was longitudinal adipose tissue on the deep surface of the linea alba in the lower abdomen of all patients, which could reduce the risk of direct peritoneal incision when cutting the linea alba.

Second, the position directly behind the posterior sheath of the bilateral rectus abdominis has loose adhesion between the peritoneum and the posterior sheath, which can generally expose the space smoothly and rarely cause peritoneal damage. Third, the Retzius space can be easily exposed from the umbilical to the symphysis pubis, but the layer may be deep, so it is necessary to approach the anterior abdominal wall at the

level below the half-loop to return to the original ideal level for TEP surgery. Fourth, the posterior sheath of the rectus abdominis in many patients is very thin, similar in appearance to the preperitoneal fascia, and can be easily cut from behind in order to enter the posterior space of the rectus abdominis. Fifth, attention should be given to identifying the upwards extension of the inferior epigastric artery from the umbilical to extend the anterior peritoneal space under the posterior sheath to avoid the difficulty of visual field exposure caused by the separation of blood vessels to the side of the peritoneum. Sixth, in all patients, the outer margin of the bilateral rectus abdominis is equivalent to the position of the semilunar line, and the peritoneal layer is dense and adherent, which easily causes peritoneal damage. When the space between the bilateral semilunar lines is separated first, the peritoneum is relaxed and compressed downwards, which can form a large angle with the abdominal wall, and is conducive to identifying the gap and successfully removing the peritoneum. However, if the anterior peritoneal fat is not exposed without cutting the midabdominal line, the posterior space of the posterior sheath of the contralateral rectus abdominis is only used to peel the peritoneal adhesion at the semilunar line. Because the peritoneum is tense, the acute angle formed between the peritoneum and the abdominal wall is relatively small even if pressed downwards, which is not conducive to identifying layers to peel the peritoneum, and the membrane is easily damaged. Seventh, when the peritoneum is damaged, the force of the instruments pressing the peritoneum will increase, and too much tension will increase the risk of vascular haemorrhage in the subabdominal vascular branch. This kind of haemorrhage can stop bleeding by itself after the tissue is severed and exceeds the position of the blood vessel, and the main blood stem will rarely bleed due to excessive pulling. Eighth, the silicone sleeve of the Iconport single-incision sealing device inserted in the incision relies on its own elastic support to form a seal, which can be installed in a small preperitoneal gap to establish pneumoperitoneum and can avoid the need to create a large space in pneumoperitoneum. The larger preperitoneal space is more likely to affect the smooth operation by peritoneal damage and incision bleeding.

Ninth, the operation of alternating coordination of instruments in the separation of the hernia sac can be completed by selecting two operation holes close to each other on the Iconport panel. The operation holes on the plastic panel are 15 mm in diameter and 12 mm in spacing. The parallel relationship between the two instruments is conducive to the alternating and dislocation of the instrument heads. When the two instruments deviate from each other, a 20-30 degree operation triangle can be formed to facilitate the smooth implementation of the operation. Tenth, because the instrument is accessed from the umbilical cord away from the groin area, it is easy to flatten the mesh, and if the surgeon wants to extend the mesh beyond the hernia ring, they simply need to cut out a larger mesh. This group of data included the surgical data of three surgeons in the learning period, and the longer operation time than the single-hole TEP operation time reported in the literature was related to the immature technology in early practice. In this study, the mean operation time for unilateral indirect hernia was 70.5 minutes, the mean operation time for unilateral direct hernia or femoral was 52.8 minutes, and the mean operation time for bilateral hernia was 90.5 minutes. The average operation time was directly related to the surgical experience of the surgeon. There was no need to increase the size of the auxiliary operation hole or change to a TAPP operation for other reasons. Two patients experienced internal spermatic vessel injury, but no other intraoperative complications occurred. Three seroma cases were observed during the 1- to 32-month follow-up period, with no other major postoperative complications. There are no obvious shortcomings to this study.

The main problems in SILS-TEP under the posterior sheath approach are as follows: 1. An appropriate incision sealing device is needed to facilitate the smooth establishment of pneumoperitoneum and preferably to maintain peritoneum integrity. Currently, the single

incision sealing device on the market needs to be improved; 2. Most doctors lack intuitive experience on whether the anterior peritoneal space behind the posterior sheath can be successfully created in the area adjacent to the umbilical foramen; 3. It is necessary to be familiar with the single-port laparoscopic operation to successfully complete the operation; 4. Good team cooperation is needed. For example, when the instrument enters the surgical field from the umbilical incision, it is best to withdraw the lens to guide the instrument under the incision; otherwise, it is easy to penetrate the peritoneum into the abdominal cavity or scratch the superficial abdominal wall, which causes bleeding. After continuous efforts, the surgical skills of the author's team are becoming increasingly mature.

In this group of data, the patients admitted by the author were routinely treated with SILS-TEP via umbilical margin incision under the posterior rectus abdominis sheath. Other members of the research group are still in the stage of selecting indications to carry out different types of surgical procedures. The similar surgeries carried out are mainly arc-shaped skin incision at the lower umbilical margin and transverse incision at the aponeurosis approximately 1 cm below the umbilical hole, which indicate that each surgeon has different understandings of the advantages and disadvantages of this surgical procedure. The author believes that the SILS-TEP operation via umbilical margin incision under the posterior rectus abdominis sheath is safe and feasible, and it is suggested that beginners choose the single-incision sealing device with a relatively small chassis. Surgeons might find it better to familiarize themselves with the single-incision sealing device by transumbilical single-hole laparoscopic appendectomy transumbilical single-hole cholecystectomy or transumbilical single-hole TAPP surgery. During the operation, we can determine in the actual environment of the abdominal cavity which operations can be successfully completed and which operations cannot be successfully completed. In addition, when making an umbilical incision, the aponeurotic layer can be cut, and the peritoneal layer cannot be opened in a hurry. It can be observed whether the preperitoneal space in the direction of the umbilical hole in the lower abdomen can be easily separated, and the size of the posterior sheath and preperitoneal space that can be successfully separated can be estimated when the size of the umbilical skin incision is determined. The larger the posterior sheath anterior peritoneal space that can be created under direct vision, the simpler the initial operation of endoscopic expansion of the anterior peritoneal space. The author suggests mastering the technique of single-hole TAPP first, because as long as the surgeon gets used to the left and right hand alternating operation, they can pull the tissue in different directions to expose the surgical field. Compared with the three-hole TAPP, the single-hole TAPP operation is not more difficult, and the surgical safety of patients learning the SILS-TEP surgery can be ensured by mastering the single-hole TAPP procedure. It has been confirmed that even if the peritoneum is completely damaged at the beginning, the smooth operation of SILS-TEP will not be affected. The learning curve of SILS-TEP surgery via umbilical margin incision under the posterior rectus abdominis sheath has also been solved. Therefore, the author believes that with simple training and selecting an appropriate single-incision sealing device, beginners can master the skills of SILS-TEP surgery via umbilical margin incision under the posterior rectus abdominis sheath, which can become an advantageous strategy to replace three-hole endoscopic hernia surgery.

VII. CONCLUSIONS

With the assistance of a suitable single-port laparoscopic device, SILS-TEP operation via umbilical margin incision under the posterior rectus abdominis sheath is safe and feasible and easy to master and popularize.

List of abbreviations

SILS-TEP, totally extraperitoneal single-incision laparoscopic surgery.

BMI, body mass index

TEP, totally extraperitoneal; totally extraperitoneal herniorrhaphy VAS, visual analogue scale.

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Declarations

Funding

None.

Competing interests

The authors declare that they have no competing interests.

Ethics approval

This study was reviewed by the research ethics committee of the Affiliated Hospital of Medical School of Ningbo University. Reference Number: 2019 KY0402.

Consent to participate

Written informed consent was obtained from all participants in this study.

Consent for publication

All information in this study was approved for publication by all participants.

Availability of data and material

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Code availability

Not applicable.

Authors' contributions

The author (Xiaojun Wang) is the inventor of the custom-made single port device named Iconport. All operations in this study were performed by all three authors. All authors participated in the study. All authors read and approved the final manuscript.

Running head: SILS-TEP by custom-made single-port device.

Authorship declaration: Xiaojun Wang is the inventor of the Iconport single-hole device. He oversaw the completion of the main content of the study.

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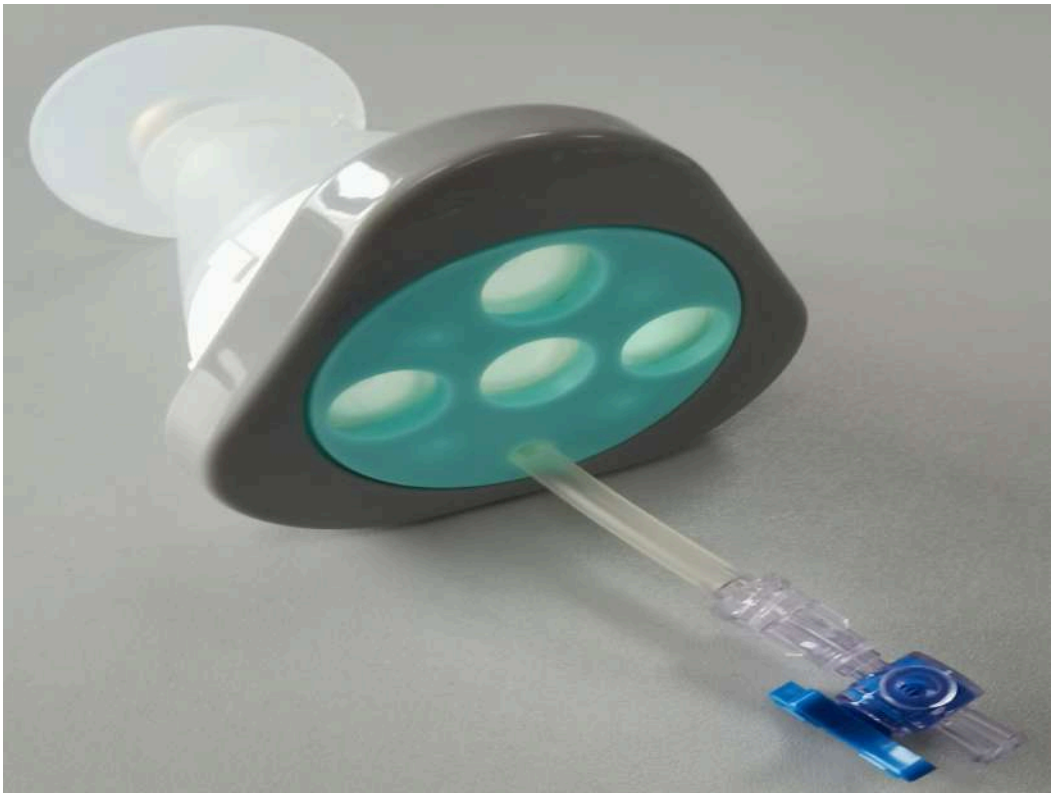

Fig. 1: Iconport single-incision sealing device (underside)

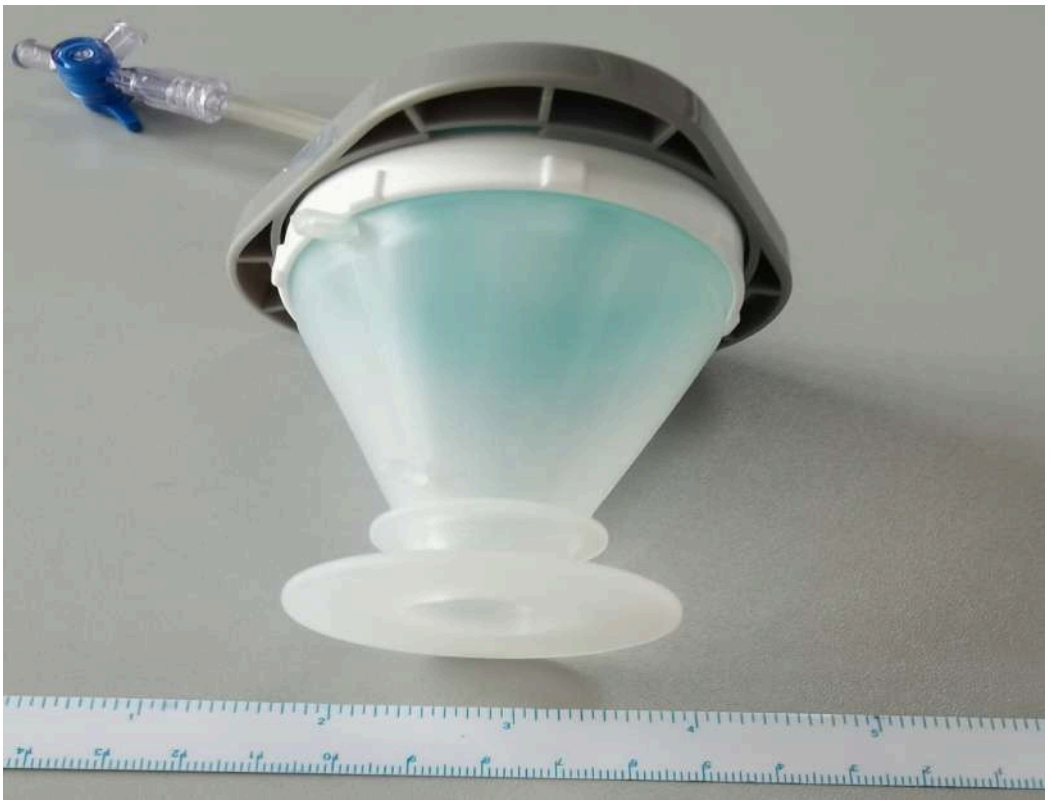

Fig. 2: Iconport single-incision sealing device (the obverse side)

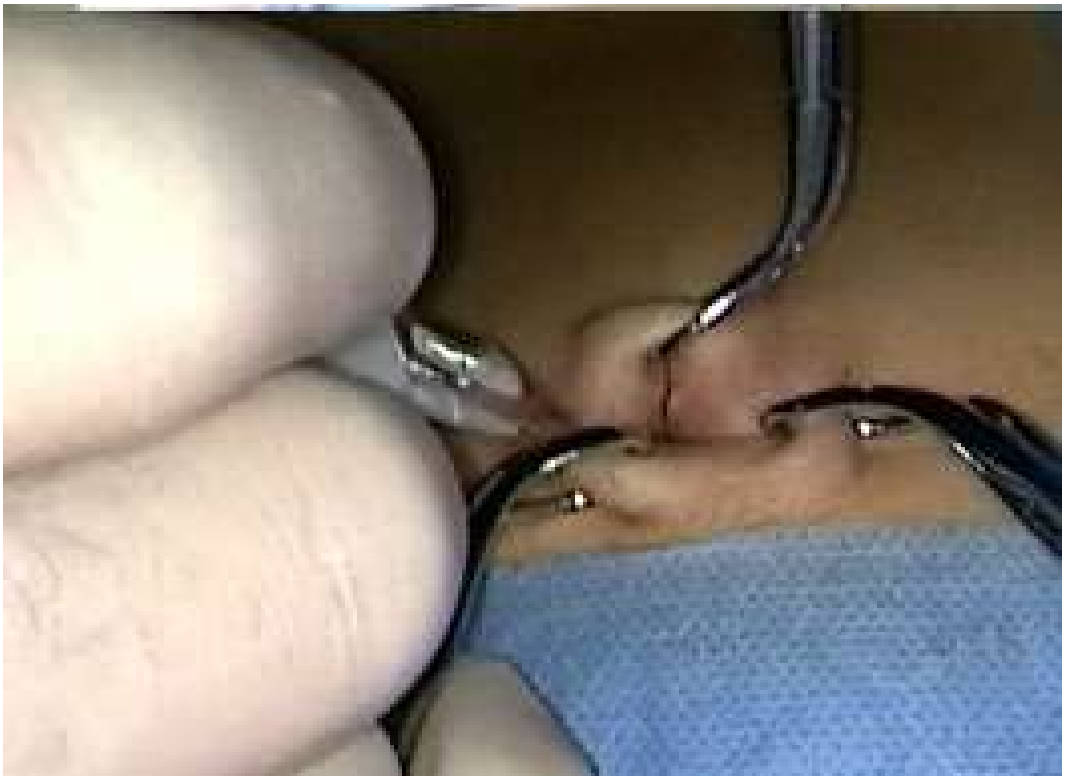

Fig. 3: Navel incision

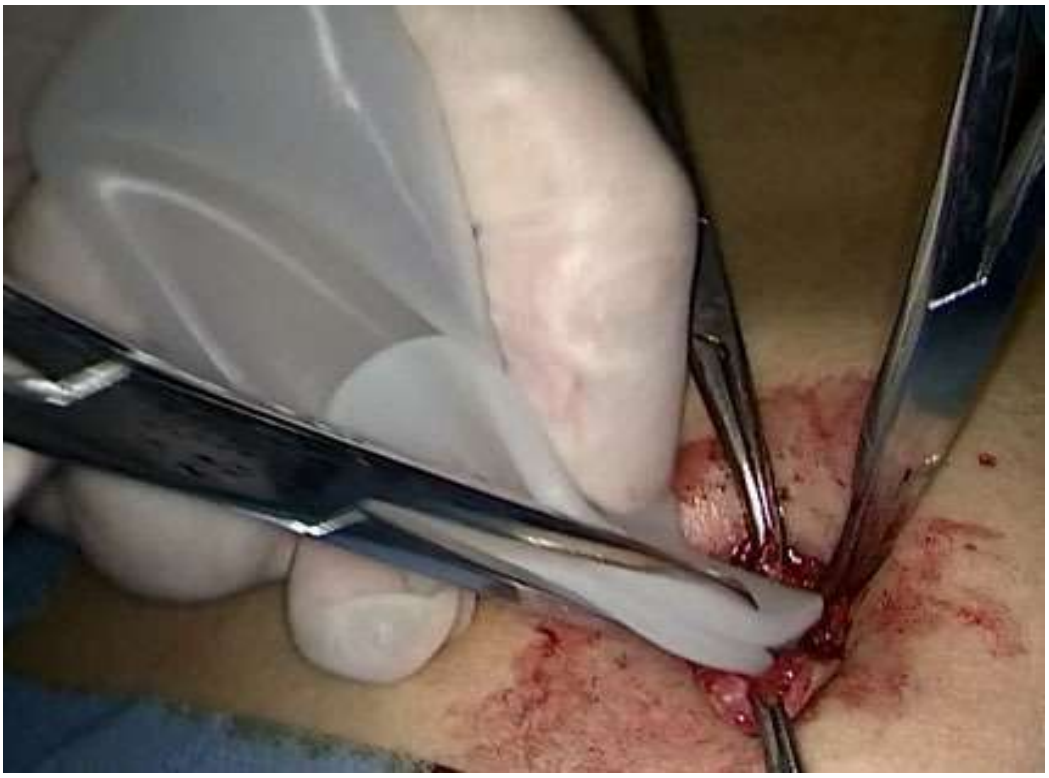

Fig. 4: Insertion of the silica gel seal sleeve inside the incision

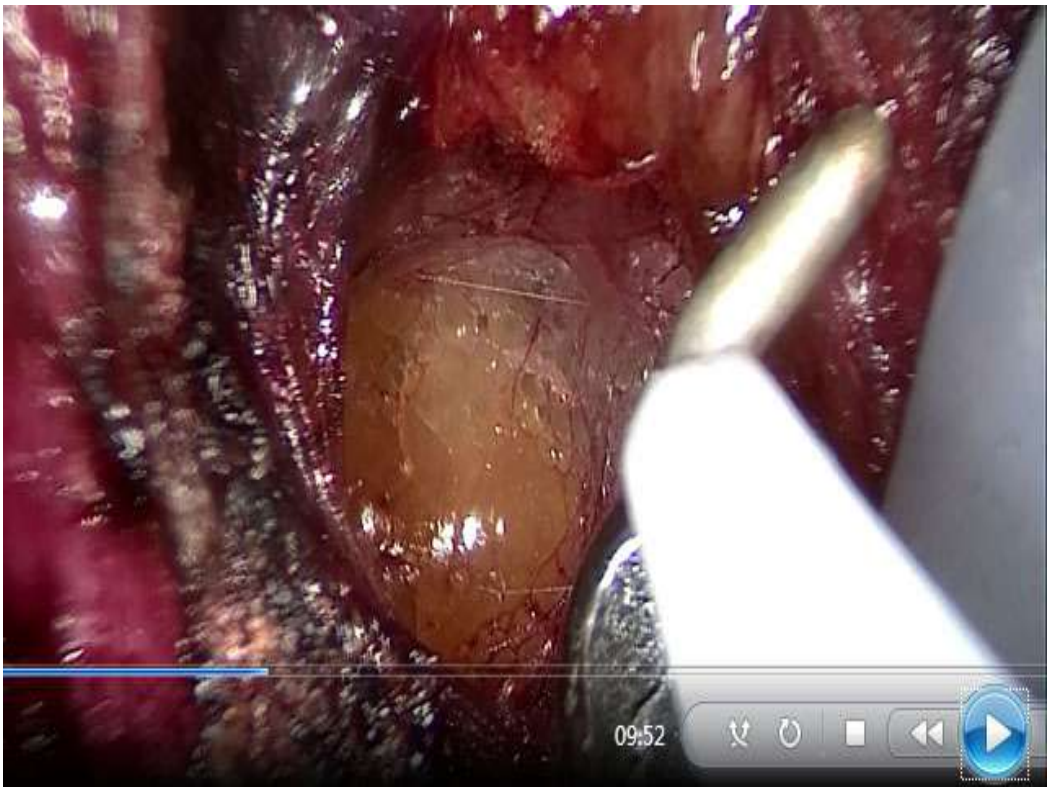

Fig. 5: Peritoneal space initially under the posterior rectus abdominis sheath in an umbilical incision

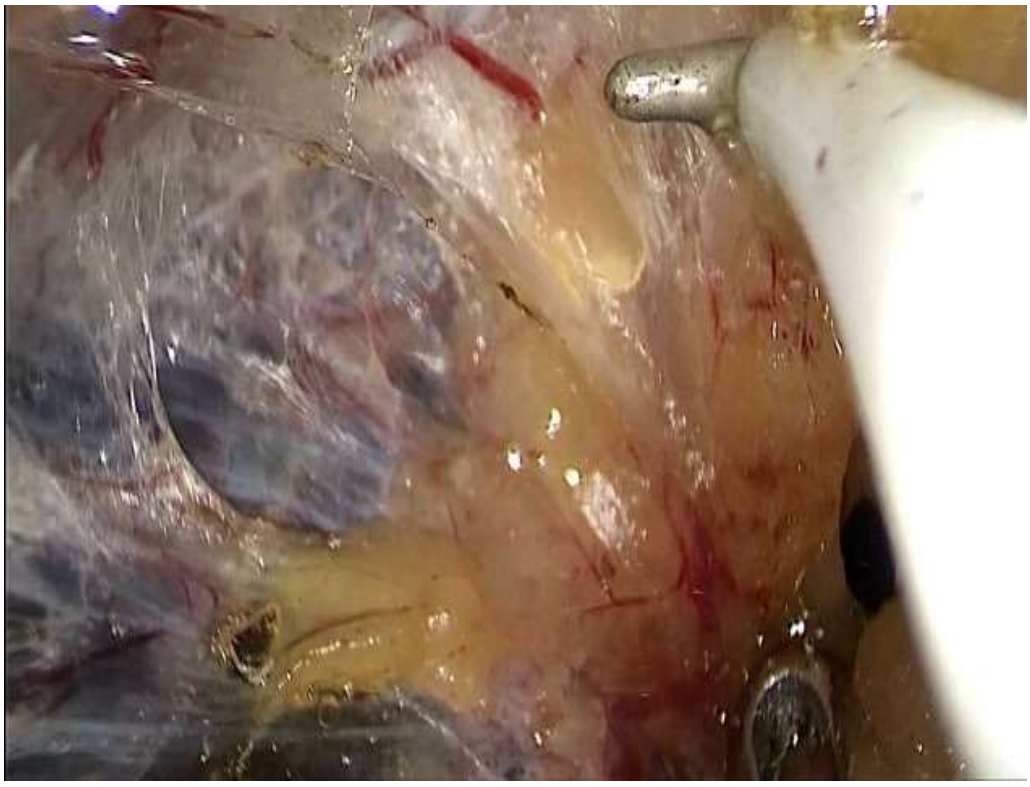

Fig. 6: Intraoperative laparoscopic view of the preperitoneal space

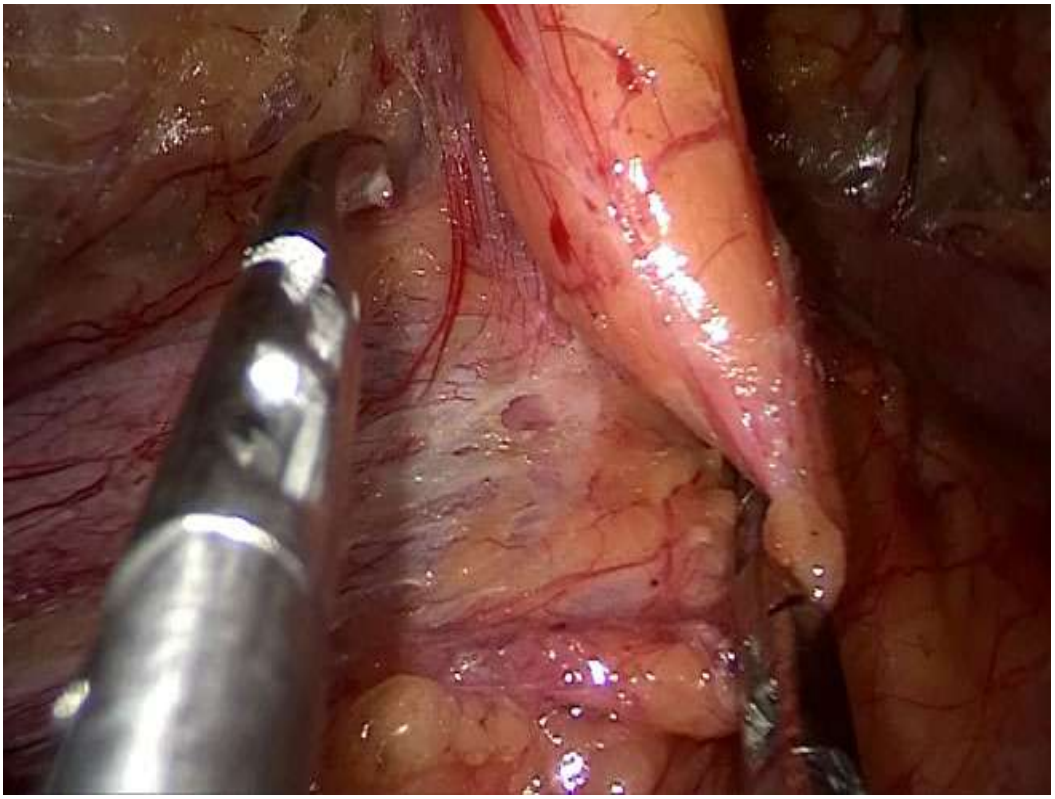

Fig. 7: Stripping of the indirect hernia sac

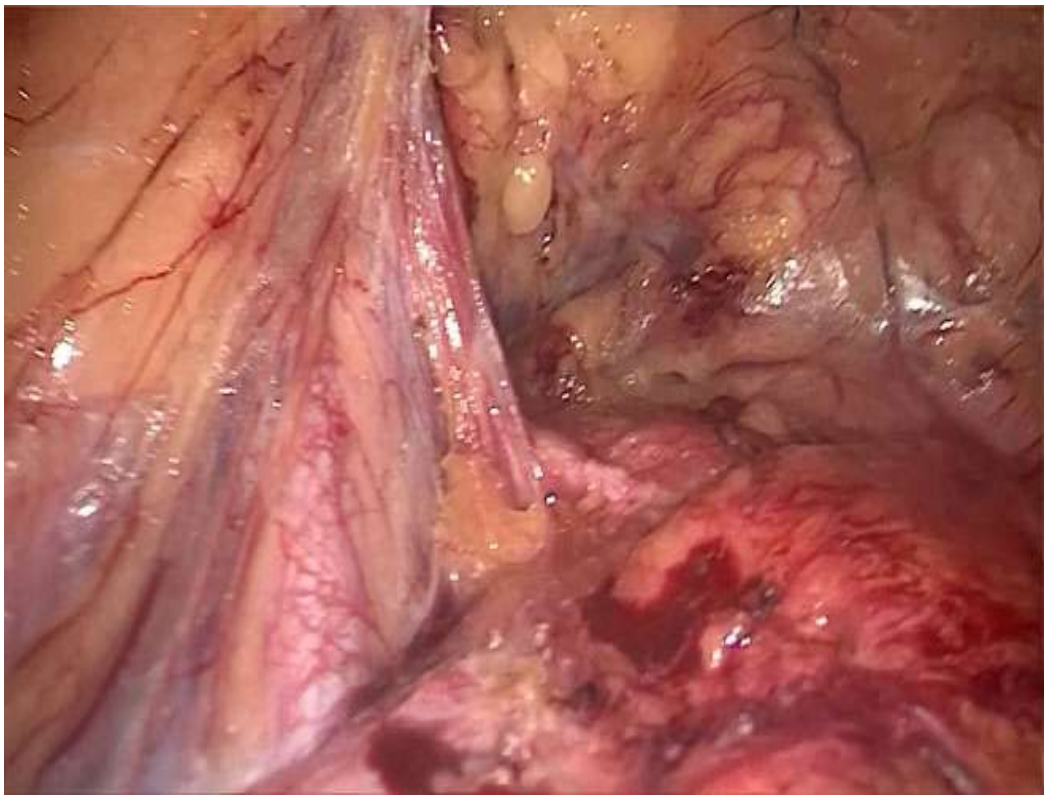

Fig. 8: Intraoperative laparoscopic view of the preperitoneal space

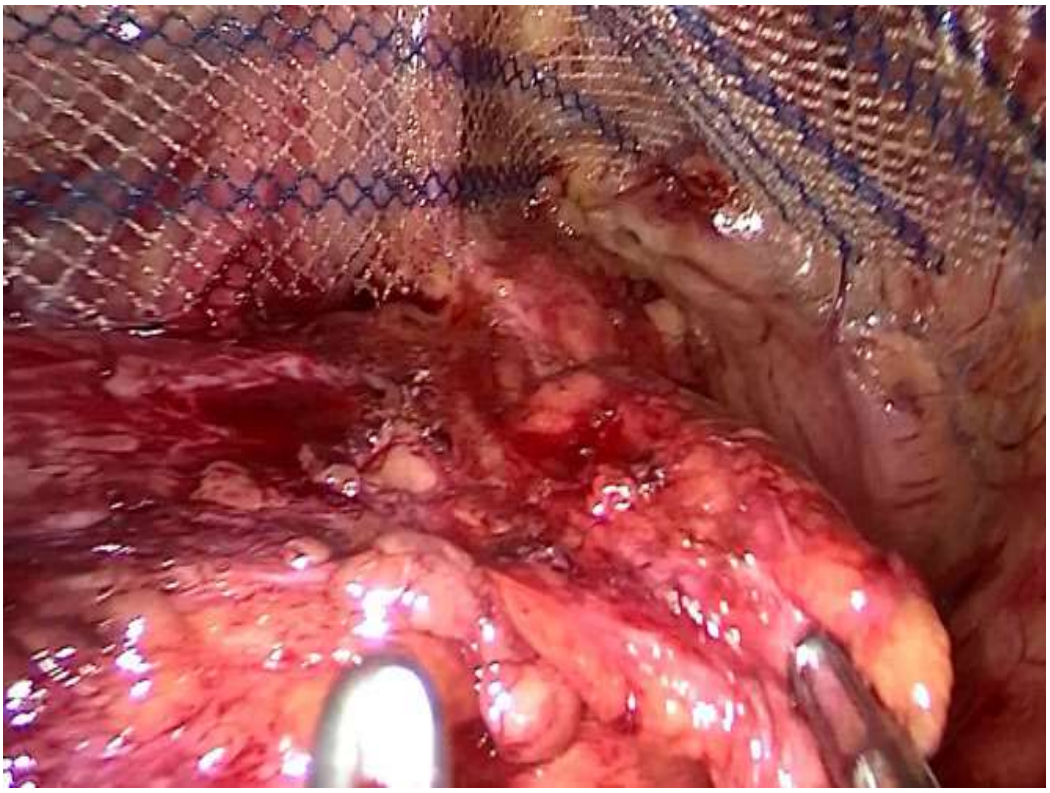

Fig. 9: Mesh deployed to cover the whole myopectineal orifice

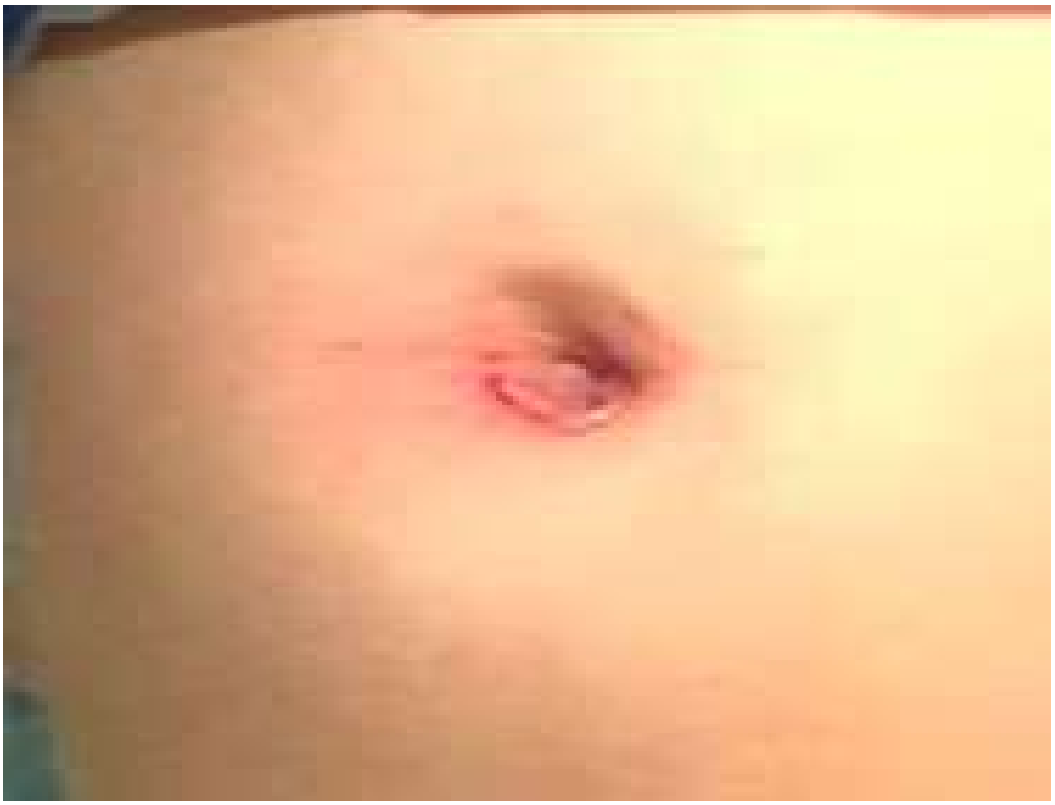

Fig. 10: Photograph of the postoperative incision

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Detection of Legionella Pnemophila in Water Air Condition in Khartoum at 2019

Alaa Kamal Ismael Hemeda & Dr. Amira Eltom Fawzi Osman

Alzaiem Alazhari University

ABSTRACT

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Keywords: legionella pnemophila, buffer charcoal yeast extract agar (BCYE).

Classification: DDC Code: 615.7922 LCC Code: RM267

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This studt cinclude that kegionella pnemmophila exist in water air condition in Sudan with high concentration in winter further research detect during all four season.

Keywords: legionella pnemophila, buffer charcoal yeast extract agar (BCYE).

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I. INTRODUCTION

Legionella are gram-negative rods whose natural habitat is water, there are more than 50 genetically defined species of which much the most important is Legionella Pneumophila. This species can be subdivided on the basis of deoxyribonucleic acid (DNA) relationships into three species. [1]

Legionella pneumophila caused Legionnaires' disease and pantiac fever. 50 valid published species and subspecies and total of 71 serologic types of legionella have been isolated from either human specimens, environmental sources or both, The people who are most likely at risk to catch infection are over age 50. The risk is greater for people who suffer from health conditions such as malignancy, diabetes, lung disease or kidney disease. Other risk factors include immuno-suppressive therapy and cigarette smoking. Legionnaires' disease has occurred in children and particularly confined to newborns receiving respiratory therapy, children who have had recent operations and children who are immuno-suppressed, People with HIV infection and AIDS do not seem to contract Legionnaires' disease with any greater frequency than the rest of the population, however, if it is contracted, the disease is likely to be more severe compared to other cases. [2]

L. pneumophila (and other legionellae) causes pneumonia both in the community and in hospitalized immunocompromised patient. The genus is named after the famous outbreak of pneumonia among people attending the American Legion convention in Philadelphia in 1976 (legionnares's diseases . [3]

The organism has been isolated from fresh water sources and various plumbing fixtures. Although recently discovered, L. pneumophila has been found in abundance in aquatic habitats worldwide, including chlorinated hot tubs. [4]

The organism survives in such harsh conditions because it is able to parasitize amoebae living in the water. L. pneumophila is not passed directly from person to person but is inhaled as aerosols from environmental sources. Legionellosis is the general heading used to include all of the diseases caused by this organism (i.e., Legionnaires' disease a pneumonia like disease, Pontiac fever a milder, short term flu like illness, and a variety of other systemic infections). Although capable of surviving extra cellular, it is classified as an intracellular pathogen because of its ability to survive and multiply inside phagosomes of pulmonary macrophages. The multiplying bacteria eventually kill the macrophages, spread, and repeat the process. The number of Legionella associated infections reported in the United States annually is 1,500 to 1,800. The CDC estimates that 10,000 to 20,000 cases go unreported each year. [5]

Legionellae are found primarily in aquatic habitats and thrive at warm temperatures; these bacteria are capable of surviving extreme ranges of environmental conditions for long periods; studies have shown that L. pneumophila can survive for up to 14 months in water with only a slight loss in viability. [4]

Legionella spp have been isolated from the majority of natural water sources investigated, including lakes, rivers, and marine waters, as well as moist soil. 8 Organisms are also widely distributed in man-made facilities, including air-conditioning ducts and cooling towers; potable water; large, warm-water plumbing systems; humidifiers; whirlpools; and technical-medical equipment in hospitals. [6]

There are a number of bacteria that grow only within amoebae and are closely related phylogenetically based on 16S rRNA gene sequencing to Legionella species; these organisms are referred to as "Legionellalike amoeba pathogens" (LLAPs). Several LLAPs have been assigned to the Legionella genus. One LLAP has been isolated from the sputum of a patient with pneumonia after the specimen was incubated with the amoeba Acanthamoebapolyphaga. Serologic surveys of patients with community-acquired pneumonia suggest LLAP may be occasional human pathogens. [6] pneumonia affects the lungs, Legionnaires' disease is accompanied by symptoms that affect other areas of the body, About half the victims experience diarrhea and a quarter have nausea and vomiting and abdominal pain. In about 10% of cases, acute renal failure and scanty urine production accompany the disease. Changes in mental status, such as disorientation, confusion and hallucinations also occur in about a quarter of cases, In addition to Legionnaires' disease, L. pneumo philalegio nellosis also includes a milder disease, Pontiac fever. Unlike Legionnaires' disease, Pontiac fever does not involve the lower respiratory tract. The symptoms usually appear within 36 hours of exposure and include fever, headache, muscle aches and lethargy. Symptoms last only a few days and medical intervention is not necessary. clarithromycin and azithromycin) are more active against L. pneumophila, erythromycin has been replaced. Alternative regimens include doxycy clinein frequently.

II. MATERIAL AND METHOD

Study design

This was Cross-sectional study.

Study area

The study was in Khartoum Omdurman in location contain water air conditions.

Study population

The study was in water air conditioners.

Study period

The study was commenced between November 2019 and January 2020.

Sample size

100 convenience non probability sample was collected.

Data collection

was collected 100 sample by swabs then culture on Buffered Charcol Yest agar.

Ethical consideration

The Permission to sample was not used for another purpose than research.

III. EXPERIMENTAL WORK

3.1 Collection of Specimen

Sample was collected from water from air condition.

3.2 Specimens processing

Specimens were cultured as soon as possible on special media Bufferd charcoal yeast extract agar incubated at 37c for 2-3 days aerobically, after growth biochemical tests were done gram satin, indole, citrate, urase motility, kligler Iron Agar litmuse milk decolrization and Antibiotic Senstivity test .

3.3 Biochemical identification

The environment isolate were subjected to different biochemical tests for their identification.

3.4 Indoletest

Indole test was made by incubate in tryptophan water for 24 hours at 37c, in the next day added Kovac's reagent which contains 4 (p)-dimethyla-minobenzaldehyde. Reacted with the indole to produce a red colored compound. To detect break down the amino acid tryptophan with the release of indole.

3.5 Motility test

Motility test was made by single stab into the center of the semi solid medium after incubation at 37c for 24 hours movement away from the stab line or hazy appearance throughout the medium indicates a motile organism.

3.6 Citrate utilization test

Citrate test was made by culture in media contain citrate incubate at 37c for 24 hours, citrate use to identified bacteria has ability of an organism to use citrate as its only source of carbon. Colored is utilized from green to blue.

3.7 Urease test

Urase test was mad by culture in media contain urea incubate at 37c for 24 hours, urase use to detect bacteria produces urase enzyme. colure a changed to pink colure.

3.8 Litmus milk decolorization test

Litmus milk decolorization test was made by culture for up to 4 hours in a tube containing litmus milk. Reduction of the litmus milk is indicated by a change in color of the medium from mauve to white or pale yellow. tis test is used to identify bacteria has ability to reduce litmus milk.

3.9 Kligler iron agar

KIA was made by inoculate a tube of kligler iron agar used a sterile straight wre stab first the butt and then streak the slop, incubate at 37c for 24 hours. KIA use to identify bacteria has ability to ferment lactose and glucose .

3.10 Antibiotic Senstivity test

Used Erythromycin, Gentamicine, Chloroam phinicol , Colistin and Amoxicillin.

III. RESULTS

Colonial morpholog

100 swabs were collected from water of air condition. All sample were cultured on buffer charcoal yeast agar.

After incubation period of 2 to 3 days, the colonies were appeared small and gery some of them were creamy to white, The colonies were shiny and glistening in appearance and convex were observed on BCYE medium .

22 of the grown culture colonies on BCYE medium were found suggestive of Legionella pneumophila; while the remaining 78 cultures did not show any growth.

Microscopic examination of smears were the organisms were Gram negative rods.

22 positive 22%
78 negative 87 %

Result of Biochemical Identification Indoletest

Brown ring negative –ve

Motility test

Line appease motile

Citrate utilization test

Colure was changed Blue colure positive +ve

Urase test

Colure was not changed negative –ve

Kligler iron agar

red / yellow

Litmuse milk decolrizatontest

Colure was changed to white colour positive

Antibiotic sensitivity test

Legionella Pnemophila was sensitive to all antibiotic.

IV. DISCUSSION

Legionella pnemophilla caused several diseases effect in human and cause Atypicall pneumonia it could cause severe disease for immuno-compromize patient.

A study was carred out to evaluate the prevalence and detect of bacteria of the legonella pnemophila n water air condition in Sudan.

100 of swabs sample were collected and cultured on Buffer Charcoal Yeast Agar and incubated for 2 days at 37c , 22% of samples was positive which is high concentration a previous research did in 2014 was revealed just 6.7 % positive result.

Collection of date and culture were done on winter and water air conditional was not used may that high level has been appeared.

Biochemal test was reveal LegonellaPneumohila positive in citrate test and litmus milk decolarization test and it is motile bacteria, and negative in indole test, urease test also reveal reaction of bacteria over Kligler Iron Agar Water air condition revealed other bacteria as a contamination .

Limitation

- This study was in one of four season.
- After air condition took long time in condition not sterile and renewable.
- Swab cannot take long time before been culture.

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Dynamic Fascial Closure and Botulinum Toxin: A Novel Alternative for the Definitive Closure of the Open and Contained Abdomen

Dr. Pablo Cingolani

RESUME

A case is presented in which a 54-year-old patient who, while being hospitalized for COVID19 pneumonia, suffered a septic shock due to acute Hinchey IV diverticulitis, for which Hartmann surgery was performed. He evolved with colonic ischemia, thus a total colectomy and open abdomen (OA) were performed.

The OA was handled with a vacuum system (VS) for 7 weeks, resulting in a type IIIa OA (Bjork) with a 26cm gap. Once the patient's clinical conditions were given, we decided to initiate a dynamic closure (DC) with a polypropylene mesh mediated fascial traction system associated with injection of botulinum toxin (BT).

Keywords: COVID19, open abdomen, dynamic closure, botulinum toxin, primary fascial closure.

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The OA was handled with a vacuum system (VS) for 7 weeks, resulting in a type IIIa OA (Bjork) with a 26cm gap. Once the patient's clinical conditions were given, we decided to initiate a dynamic closure (DC) with a polypropylene mesh mediated fascial traction system associated with injection of botulinum toxin (BT).

This strategy allowed a primary fascial closure (PFC) of the abdominal wall five weeks after starting the treatment, thus avoiding the morbidity of a second intention closure.

Keywords: COVID19, open abdomen, dynamic closure, botulinum toxin, primary fascial closure.

I. INTRODUCTION

OA is a therapeutic strategy that many surgeons are forced to come back to in the management of abdominal sepsis, damage control and abdominal compartment syndrome (ACS)[1], using a temporary abdominal closure (TAC) until the necessary conditions are achieved to perform a definitive closure of it.

When an early closure is not possible, the possibility of performing a PFC decreases abruptly, the hospitalization period is prolonged, and the incidence of complications associated with this method increases. [2]

With the goal of visceral protection and to facilitate posterior closure, while allowing easy access to the abdominal cavity, various static and dynamic TAC techniques have been described. A TAC technique should ideally provide visceral coverage while maintaining a physiological environment, prevent evisceration and adhesions between the viscera and the abdominal wall, decrease the retraction of the abdominal rectums, actively remove the excess of fluids along with bacteria and debris, be easy to use and as a consequence of all these mechanisms, preserve the integrity of the viscera and facilitate the definitive closure of the abdomen. [3]

Older techniques such as the Bogota bag not only do not allow adequate control of fluids but have shown not to facilitate the closure of the abdominal wall, resulting in long periods of hospitalization, with the dreaded risk of entero-atmospheric fistulas and the inevitable consequence of giant eventrations with their concomitant morbidity. With the advent of negative pressure therapy, these techniques began to evolve. However, the PFC of the open abdomen, mainly in prolonged therapy with a vacuum system, was not satisfactory. [4]

In 2007 Petterson et al describe the DC technique of the abdominal wall-Vacuum assisted wound closure with mesh mediated fascial traction-using progressive fascial traction with polypropylene mesh and VS, as a therapy for long-standing OA, facilitating PFC and reducing the complications associated with TAC of the OA. [5,6]

Since then, this technique has been used in several centers, and its experience and its long-term results are still under study. [6,7,8]

We present a case which we use this type of DC associated with the injection of BT in the lateral muscles of the abdomen, already used by Ibarra-Hurtado et al. in the preoperative management of giant eventroplasties, favoring the medialization of the rectus muscles and the compliance of the abdominal wall. [9]

A PFC of an initial defect of 16 cm was achieved in a type III OA (Bjork), without complications, with a follow-up of 6 months.

II. CLINICAL CASE

A 54-year-old patient who was hospitalized for bilateral pneumonia due to COVID-19, presented an acute perforative abdomen with a diverticular focus with fecal peritonitis and a requirement for Hartmann's surgery, with OA and with Bogota bag. Subsequently, a total colectomy with terminal ileostomy was performed due to colonic ischemia.

She was admitted to the Intensive Care Unit, treating sepsis at the respiratory, abdominal, urinary and biliary areas. Multiple cavity washes (12) and a percutaneous cholecystostomy were required.

She remained with a vacuum aspiration system (VAS) as TAC and weekly replacements were performed for 7 weeks, resulting in an OA type IIIa (Bjork).

A decision is made after 70 days, with the patient presenting favorable clinical conditions, dynamic closure with fascial traction using polypropylene mesh and VS.

She required a total of 6 scheduled admissions to the operating room for replacement of the VS system associated with section and gradual approximation of the mesh traction system [Figure 1]. Each procedure lasted approximately 20 minutes. All were performed in the operating room, under general anesthesia. On the third admission, 30 days prior to definitive closure, ultrasound-guided botulinum toxin infiltration was performed in the plane between the transverse and oblique minor muscle. A total of 100 IU of toxin were infiltrated, distributed in 3 equidistant points on each side.

An average of 2.6 cm was advanced in each procedure, starting with a gap of 16 cm. [Figure 2]

Definitive closure was achieved 6 weeks after starting therapy, performing a simple closure of the aponeurotic plane with PDS 0 in 6 tension-free sections. The patient remained admitted to the general hospital ward and was discharged from the institution 48 hours after the definitive closure, without complications associated with a 6-month postoperative follow-up.

II. DISCUSSION

OA is an entity with high morbidity and mortality, not only due to the critical condition of the patient, but also due to the complications of the method. Enteric fistula and complex eventration with loss of residence are the ones with the highest morbidity. Early PFC is the most optimal strategy to avoid them. [10]

Negative pressure associated with TAC should be the selected therapy since it has shown superior results when comparing cases in which this technique is not used or is not available. [2]

In patients who do not perform an early definitive closure (7-10 days) and who present a type I and II OA (Bjork), DC is recommended as it has shown benefits compared to the static one. [11]

A prolonged OA presents a great retraction of the lateral muscles, type III has firm adhesions (frozen abdomen) and type IV enteric fistula. [12] This condition causes them to be deferred for a definitive closure after 6 to 12 months, with an extensive period of great morbidity and condemned to complex herniations.

BT has been used both in delayed closure for the treatment of large hernias as a result of OA, as well as in its acute management to facilitate definitive closure. [9,13.]

In our case, the use of DC (fascial traction through mesh and VS) combined with the application of

BT in a period of 5 weeks, allowed the PFC of a type III OA (Bjork).

The DC must include VS with an extensive separation sheet in the space between the viscera and the parietal peritoneum, avoiding adherence between these two planes to allow the muscle wall to slide over the viscera.

On the other hand, TB acts on the great muscular retraction of the lateral muscles generating a flaccid paralysis that allows us to elongate them, facilitating the medialization of the rectums with the traction of the DC and in this way it achieves the PFC without tension.

IV. CONCLUSION

We consider that the association of DC and BT would allow doctors to achieve definitive abdominal closure in patients with great muscle retraction OA, type III (Bjork) who are currently deferred for late closures. Experience with a greater number of cases is required to be able to produce long-term results with the use of this technique.

Authors' Note:

- We declare that we have no conflicts of interest. The clinical case has not been previously published, neither has it been in the process of evaluation or publication in another journal. I authorize the publication of the document by the Argentine magazine of surgery.

Figure 1: Dynamic closure technique, with section and gradual approximation of the traction system with polypropylene mesh associated with VS therapy

Figure 2: Evolution of therapy. An initial 16cm gap is observed on computed tomography of the abdomen, with wide muscle retraction. On the right, there is evidence of broad muscle relaxation (red box) after infiltration with BT and approaching of the rectus muscles to the midline

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A Case-Report Highlighting Effects of PMF Capsules on a Lung Cancer Patient

Fatin Khorshid, Sana AlAttas & Musab Ahmad Bazie Al-Yaseen

King Abdulaziz University

ABSTRACT

This case highlighted the tremendous improvement experienced in a patient with Lung Cancer treated when conventional treatments were combined with PMF capsules.

We, therefore, conclude from what is observed and suggest a possible link between PMF and PMF Capsules in this patient's tremendous improvement from Lung Cancer. Further research is necessary including case series documentation to further reinforce the hypothesis that can be proven in larger case-control or cohort studies. Our case demonstrated improvement in the management of Lung Cancer using PMF capsules (500mg/day). PMF is alcoholic extract from camel urine.

Keywords: PMF, lung cancer, camel milk, case report, x-ray, computer tomography.

Classification: DDC Code: 823 LCC Code: PR6037.M425

Language: English

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I. INTRODUCTION

Diagnosis. First Clinical Findings May 2014 Tuesday, May 13th, 2014: Checkup via Roentgen analysis, performed by a medical specialist in pulmonology (Dr. med. Schroter, Trier, Germany) Result: Suspected lung cancer and lung fibrosis.

X-ray computed tomography (CT) on Thursday, May, 15th, 2014 (performed in the St.-Franziskus-Hospital at Saarburg near Trier). The next day Dr. med. Schroter confirmed the diagnosis and contacted other specialists for further examinations (Dr. med. Joachim Vogt, medical superintendent of pulmology, Dept. of Inner Medicine III, *"Krankenkaus der Barmherzigen BT der", Trier, (Germany).*

Lothar Dieter wrote: we were all surprised by how quickly everything happened. I remember talking to him last Wednesday when everything was still very good.

What may be worth noting is that it was pretty clearly an infection or pulmonary inflammation being the cause of his death, not cancer (at least not directly). When he went to the hospital on Thursday night, all the typical checks were done computer tomography (CT), an x-ray of the lungs, etc.), but no acute or severe problem was found, nor any large tumors.

Well, we are all in the hands of God the Almighty. He is leading us according to his plans. And for my Dad, these plans were to leave our earthly world and to join the heavenly world today. But part of these plans also was to cross paths with you about two years ago... and we are so unbelievably grateful for this special gift of having made contact with you! Without you and your noble help, my Dad would have been dead already very long ago. It is your gift and the power of PMF that gave my Dad a second life and gave us almost two happy and good years with my Dad! We are just unbelievably grateful! Thank you so much!! And when writing this, it is of course also in the name of my sister and my Mom, who both want to express their sincere thanks.

After returning home yesterday morning, I have noticed from my Mom that his condition drastically worsened over the weekend. My sister had already come to Trier (where my parents live) on Saturday, and I drove there yesterday around noon time. All three of us (my Mom, my sister, and myself) spent the afternoon with my Dad in the hospital, and I was so fortunate to have some time with him being awake and relatively clear in the mind (although pain killers were bedimming his mind). He was aware of me being there, asked about the trip and you, and expressed his deepest thanks to all your noble support! In the evening, knowing that we all were with him, he became very calm and peaceful. The night was good and quiet. In the morning he even had some little pieces from the breakfast, then turned to the side, became even more relaxed, and within a few minutes peacefully passed away. He had no pain and no struggle. It just felt as if his time was over. Very simple. Very peaceful.

We will for sure stay in contact. I'll contact the lawyers as we discussed. And we will work on getting the import approval for the PMF capsules so we can help many other people. Concerning Mr. Leipe, tomorrow I'll hand over his 60 capsules (worth 1 month) as planned. Of course, I'm also happy to pass on all the capsules which were planned for my Dad — but in this case, I first wanted to hear your plans and opinion. At the end, these are your capsules and you should decide to whom to pass them on. So I didn't mention this to Mr. Leipe or promise anything — you shall decide what to do with my Dad's capsules.

Thank you so much for everything you did for my Dad! It is because of you that he lived happily and with so much confidence for the past two years! thank you so much for your warm-hearted message and your greetings to our family! I will for sure pass those on to my Mother and my Sister!

Of course, it is anything but easy to lose a loved one. And in quiet moments, we're all very sad. But life goes on, and looking at it from a broader perspective, we are so grateful for having such a long and great time with him. We're so blessed to have him as our Father and Husband! He had a good and long life, was never seriously ill, and even in the last two years when faced with this illness, he had a comparatively good time. And this is, in particular, owing to you! Because of your caring, your support, the capsules, and your positive thinking, he was so faithful, happy, and also physically doing well! We thank God for bringing us in contact with you, and we're so extremely grateful for all your support! Please pass on our sincere thanks and our best wishes also to your Wife and your family! And pass on to your Wife that we're all doing fine, being very grateful, and thanking God for every little detail of life (even if death is part of it).

Concerning Mr. Leipe: He contacted me last week, being nervous about his Dad running out of capsules and him not having enough time to travel quickly to Kuwait within the next few days. (Well, capsules running out shouldn't have come as a surprise to him... but he seemed a little overstrained). I know I have promised you not to pass on capsules before Mr. Leipe contacted you first. But before risking an interruption in his Dad's medication, I anyway passed on another month's worth of capsules to him. I hope this was in your intent as well.

One difficulty for Mr. Leipe is, that he doesn't speak (or write) English but he has to ask a friend to translate and write his emails — this is the reason, why it took him a few more days to get in contact with you.

As you gave my Dad a 3 months ration with 3 capsules per day (total 3‘90=270 capsules), and I already handed over a normal 1-month ration (60 capsules) to Mr. Leipe last week, I still have a good 3 months worth of capsules (210) left. Mr. Leipe had been aware of me having a 1-month package, but he's not yet aware of me having additional 3 packages. With your consent, I'm of course happy to pass on those capsules to him.

And yes, for sure I'm happy to stay involved in the contact with Mr. Leipe, and possibly others in the future, too.

Concerning our endeavor to get an import approval for PMF: I contacted the lawyer Mr. Ballke as mentioned in my last email, but didn't hear from him until last Friday. On Friday, he apologized that he had been sick for the last week and just returned on Friday. He will discuss the next steps with the laboratory and come back to us within the next few days with a formal offer on how to proceed. Of course, I'll let you know as soon as I hear from him.

II. CASE PRESENTATION, MANAGEMENT AND FOLLOW-UP REPORT

Cancer Report
Patient: Dieter Baum
The year 2014
Diagnosis. First Clinical Findings May 2014
Tuesday, May 13th, 2014: Checkup via Roentgen analysis, performed by a medical specialist in pulmonology (Dr. med. Schroter, Trier, Germany.) Result: Suspected lung cancer and lung fibrosis.

X-ray computed tomography (CT) on Thursday, May, 15th, 2014 (performed in the St.-Franziskus-Hospital at Saarburg near Trier). The next day Dr. med. Schroter confirmed the diagnosis and contacted other specialists for further examinations (Dr. med. Joachim Vogt, medical superintendent of pulmology, Dept. of Inner Medicine III, *"Krankenkaus der Barmherzígen BT der", Trier, (Germany).*

Thursday, May 29th, to Saturday, May 31st, 2014 in-patient treatment in the hospital, Execution of the first biopsy, lung functionality test, echocardiography, BT Thorax. Finding: Increasing number of pulmonic seats (see 9 (1).

2.1 Clinical Findings June 2014

Wednesday, June 11th, 2014: Position Emission Tomography together with X-ray Computed Tomography (PET/CT) arranged by Dr. J. Vogt.

June, 26th, to June, 28th, 2014: In-patient treatment for clearing (" Kran-kenhaus der Barmherzigen Briider", Trier). Several check-ups based on electrocardiography, Roentgen, magnetic resonance imaging/MRT (head), second lung biopsy.

Diagnosis: Confirmation of cancer status. Lung-carcinoma within the right lower lung lobe (6.5 cm x 7.4 cm x 6.2 cm).

Monday, June, 30th, 2014: Tumor conference, hospital" Krankenhaus der Barmhersigen Brüder", Trier (see [2]).

III. RESULTS

State of tumor:
cT4 cN3 cMx / G2.
UICC-state: III B.
Histology: Plate epithelium carcinoma.
Karnofsky-Index: Normal state, 100 % (ECOG 0).
July 2014 Tuesday, Juli 8th, 2014: Preparatory explanation of planned chemotherapeutics. Cancer is incurable, only palliative chemotherapeutics with medicament *Gemuor (Gemeitabine-monolkeropeutics)*. treatment planned in 6 cycles, each cycle comprising two weekly infusions and one week for blood control, so 6 cycles within 18 weeks. Control CT on September 16th, 2014 (half-time).

Thursday, July l7th, 2014: Second diagnosis from university hospital Heidel-berg (surgeon professor Dienemann). Operation possible in case of chemother- apeutical success.

September 2014

Friday, September 5th, 2014: Additional second diagnosis from the university hospital Frankfurt: Same result.

Presumably around these dates: Documentation via TV" telecasting on arabic tradition with respect to camel urine as a medicine against cancer. Contact addresses got from scientific. articles written by Professor Fatin. A. Khorshid and co-authors: " The Cytotoxic effect of PM 701 and its Fraction on Cell Proliferation of Breast Cancer cells. MCF 7" (4), and" Cytotoxicity of the urine of different camel breeds on the proliferation of lung cancer cells A 549' with Dr. Z. Alghamdi (5). E-mails sent to Dr. Z. Alghamdi (September 30th. 2014) and Prof. Fatin A. Khorshid (October 2nd, 2014) asking for the possibility to use camel urine.

Tuesday, September l6th, 2014: Control CT shows new pulmonary metastases and cancer progress (see [6]).

Breaking off chemotherapeutics on Wednesday, September 24th. Monday, September 22nd, 2014: First contact with Dr. med. Martin Sebas- tian, medical superintendent of oncology, university hospital Frankfurt. In the following, he became the treating medical doctor.

October 2014

After nearly 10 months of not having showing up in at university office, I spent on Monday one hour around noon in the office.

October 13th , 2014, together with a colleague. First Stayed for one hour in my university office. During that time I have received a call directly to my Office phone (++49 - (0) 65l 201 2845) from Kuwait. It was from his excellency, Sheik Musab AlYaseen. He offered to give the camel urine capsules free of charge if I could manage to visit Kuwait.

Friday, October 31st, to Sunday, November 2nd, 2014: It was my first trip to Kuwait.

November 2014

Monday, November 10th, to Wednesday, November l2th, 2014: First in-patient treatment at the university hospital in Frankfurt. CT-controlled puncture for tissue extraction; CT thorax and abdomen. Lung functionality control (see [7]).

November 14th 2014: Started using the given camel urine capsules.

Monday, November 17th, to Tuesday, November 18th, 2014: Second in-patient treatment at the university hospital in Frankfurt. Second CT-controlled puncture for tissue extraction (see [8]).

December 2014

Friday December 5th, to Sunday, December 7th, 2014: It was the second trip to Kuwait. It was the second meeting with his excellency Sheik Musab AlYaseen, and his family and friends as well.

By the middle of December: Intensive pain due to bone metastases. He was using crutch for walking.

Christmas time: Medical examination took place at the St. Joseph's hospital in Hermeskeil; recommendation was given by doctors for bone scintigraphy.

Monday, December 29th, 2014: A call from Dr. Sebastian / Frankfurt: Tissue analyses showed, MET-amplifier, permitting special treatment with medicament Crizotinib.

The year 2015
January 2015

Monday, January 5th, 2015: CT Thorax + pelvis at Saarburg, St. Franziskus hospital accomplished. Bad cough.

Findings: Considerable Pleural effusion (disk with picture data available).

Thursday, January 8th, and Saturday, January 10th, 2015: Emergency ward," Krankenhaus der Barmherzigen Bruder", Trier: Pump off of 4.75 liters of malignant blood water from the lung. CT-findings: Bone metastases; considerable deterioration of tumor status, diffuse progressions of pulmonary metastases. Morphine based analgesics *Tilidin*.

Thursday, January l5th, to Tuesday, January 27, 2015: ln-patient treatment at the University of Frankfurt. Pleurodesis was not feasible due to residual pleural effusion. Scintigraphy shows bone metastases. Started the treatment with Crizotinib on Tuesday, January 27th, 2015.

February 2015

Wednesday, February 4th, to Tuesday, February 17th, 2015: In-patient treatment in the Hospital "Mutterhaus der Borromäerinnen", Trier, Germany.

Second attempt of pleurodesis. The patient started with radiation therapy.

Monday, February 9th, 2015: Control-CT at the hospital "Mutterhaus der Borromäerinnen". Findings: Manifestation reduction of the lung metastases (see [9]).

Interpretation Dr. Sebastian, Frankfurt: Fantastic results!

February 9th, 2015: Results were interpreted as the first proof of the success of PMF treatment.

Wednesday, February llth, 2015: Pleurodesis at the hospital "Mutterhaus der Borromaerinnen".

Monday, February 16th, 2015: Roentgen- control; findings: No pneumothorax, progress of an emphysema (see [10]).

Sunday, February 22nd, 2015: Emergency ward, "Krankenhaus der Barmherzi- gen Brüder", Trier: Skin emphysema, swelling over the whole body. Reception as in-patient. Pneumothorax on the right side. CT controlled thorax drainage (see [11]).

Friday, February 27th, 2015: Discharge from the hospital" Krankenhaus der Barmherzigen Bruder", Trier: Skin emphysema removed (see [12]).

March 2015

During March 2015: Oedema in legs.
Monday, March 30th, 2015: Thorax-CT, hospital " Krankenhaus der Barmher- zigen Brüder", Trier. Skin emphysema removed, pleural effusion diminished (see [13]).

April 2015

Tuesday, April 21th , 2015: CT thorax and abdomen," St.- Franziskus-Hospital" at Saarburg. Findings: No deterioration, decline of primary *tumor,* consider-able regression of pulmonary seats (see [14]).

Wednesday, April 29th, 2015: Judgement of Dr. Sebastian, from the university hospital Frankfurt. Tumor status reassuring, was declined by over 50%, fibrosis probably side- effect of medicament Crizotinib. Therefore, dosage reduction to 2 x 200 mg per day.

Wednesday, April 29th, 2015: Result interpreted as a second proof of the success of PMF treatment (Based on reference [15]).

May 2015

Friday, May 1st, 2015: First car travel to daughter Friederike in Lippstadt.

June 2015

Thursday, June ll th, 2015: First injection of medicament Xgeva for stabilizing bone reorganization.

July 2015

Saturday, July 4th, 2015: Second longer car driving (black forest).

Friday, July 10th, 2015: X-ray computed control tomography Thorax and Ab domen, St.-Franziskus-Hospital, Saarburg. Clear regredient pleural effusion, no significant change of pulmonary seats, suspicion of bone metastases as before (see medical report CT thorax and abdomen [16]).

Tuesday, July 14th, 2015: Trip to Frankfurt, discussion with treating medical doctor M. Sebastian. Positive assessment of status: He was agreeably surprised reading the actual findings; again used the word "fantastic". I asked him what was the openion of the medical doctor, not being acquainted with my case, would give just after observing the last CT-pictures, and he said: "Cancer could diagnose only as part of a differential diagnosis".

Wednesday, July 22nd, 2015: The patient received a second Xgeva injection (for stabilizing bone reorganization).

August 2015

Wednesday, August 19th, 2015: Third Xgeva injection was given to the patient (for stabilizing bone reorganization).

September 2015

Wednesday, September 30th, 2015: Fourth Xgeva injection was given to the patient (for stabilizing bone reorganization).

October 2015

Thursday, October l5th, 2015: CT thorax and abdomen, St.-Franziskus-hospital, Saarburg. Findings: Small liver metastasis (5 mm), fibrosis has progressed, some more lymphatic nodules. Apart from that no further findings (see [14]). Friday, October 23rd, 2015: MRT head, St.-Franziskus-hospital, Saarburg. Findings: No metastases (see [17]).

November 2015

There was an increasing appearance of oedemas in legs and hands, tussive irritations. Slight lung pain.

Thursday, November 5th, 2015: A decision to discontinue Crizotinib (Dr. Sebas tian agreed).

Wednesday, November 18th, 2015: Fifth injection of Xgeva (for stabilizing bone reorganization). Strong coughing, obviously due to lung infection.

Monday, November 23rd, 2015: Antibiotic treatment for 10 days was followed.

December 2015

Friday, December 4th, to Sunday, December 6th, 2015: Third trip to Kuwait. Very bad condition, the trip was a wrong decision.

Thursday, December 10th, 2015: Emergency ward," Krankenhaus der Barm-herzigen Bruder", Trier. Thorough check including electrocar-diography, blood analyses, roentgen, medical ultrasound, percussion, and auscultation of the lung. The medical doctor seemed somewhat surprised and consulted the medical director of the pulmonology department, Dr. J. Vogt, who shortly arrived and did few tests over again.

However, both told me that all results were very satisfying! The findings of electrocardiography, blood analyses, roentgen, and the ultrasound images showed normal status (as long as taking into account my age). There was no pleural effusion worth mentioning, the cancer seemed to be inactive, the immune system should be able to cope with small metastases. The actual bad condition should be due to an infection. Altogether they suggested doing NOTHING! That is, to apply no therapy at the time being. Alternatively, I should have asked the doctors at the university hospital in Frankfurt for other therapy options if any.

Thursday, December 10th, 2015: Results interpreted as third proof of success of PMF treatment (based on reference [18]).

Christmas time: Quick worsening status, strong cough, loss of weight, severe pain, massive weakness. Analgetics Tilidin (morphine based), Novalgin, Ibuprofen.

The year 2016
January 2016

Monday, January 18th, 2016: X-ray computed control tomography (CT), performed at the St.-Franziskus-Hospital at Saar burg. Findings: New pulmonary seats, considerable progress of tumor and mediastinal lymph nodes. Liver metastases as before, additional new liver metastases. In thorax as well as in abdomen: considerable tumor progression (see [19]).

February 2016

Wednesday, February 3rd, 2016: A visit to Frankfurt university hospital (no self-driving). Dr. Sebastian confirmed that the cancer is back, and is incurable. And only, the lung cancer that could be treated. Meanwhile,the metastases probably could be handled the same way as previous. He suggests starting all *over* again with the medicament Crizotinib.

Patient Consent

Consent A written consent has been obtained from the patients.

Conflicts of Interest

The authors declare no conflicts of interest.

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Rare Diseases in Underdeveloped Countries of West Africa. Are they Really Rare?

Asmell Ramos Cabrera

American International University

ABSTRACT

Next February 28 will be celebrated once again the international day of rare diseases, it is my intention to expose the reasons why these diseases are forgotten, silenced and underdiagnosed in developing countries, with the consequent delay in diagnosis, cure or relief and co or consequence late incorporation into society to the extent of its possibilities and as unfortunately often occurs discrimination and stigmatization of patients.

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Next February 28 will be celebrated once again the international day of rare diseases, it is my intention to expose the reasons why these diseases are forgotten, silenced and under-diagnosed in developing countries, with the consequent delay in diagnosis, cure or relief and co or consequence late incorporation into society to the extent of its possibilities and as unfortunately often occurs discrimination and stigmatization of patients.

Keywords: rare diseases, developing countries, @asmellramos.

Author: Senior Internal Medicine Consultant EFSTH HOD MEDICINE American International University.

According to the World Health Organization (WHO), rare diseases (RD) are those that occur in fewer than five people per ten thousand inhabitants and there are more than seven thousand diseases. Rare Disease's Day will be commemorated on the last day of February. The main goal is to recognize the existence of these "silent conditions" to mention the reason why are for and involve doctors and civil society. [1]

Although there is no single definition for the term "Rare Disease", all definitions are based on the frequency with which they occur and also include elements such as the severity of the manifestations and/or the availability of treatment. The definitions used in the medical literature and the different national health programs fluctuate between prevalence's of 1:1,000 to 1:200,000 inhabitants. In the United States, the Rare Diseases Act of 2002 defines a rare disease strictly according to its prevalence and specifically says that it refers to any disease or condition that affects fewer than 200,000 people in the United States, which is equivalent to about of 1:500 people [3-5], in Japan, the legal definition states that a rare disease is one that affects fewer than 50,000 patients, which is equivalent to 1:2, 500 people. [2] The European Union defines rare diseases (RDs) as life-threatening or chronically debilitating conditions whose prevalence is less than 5 per 10,000.

Moreover, for many RDs, including those of genetic origin, combined efforts are required to reduce morbidity or perinatal and early mortality, and address the considerable decline in an individual's quality of life and socioeconomic potential. [6-10] Excluded from this definition are diseases that are statistically rare, but that are not life-threatening or chronically debilitating. Nevertheless, definition of RD demands the existence of a reliable statistical system that reflects the true impact of the disease on society. But at least in this West African country (Gambia) the study of rare diseases is a challenge for health services, and I will present my personal considerations.

Some of the countries of the region lacks reliable statistics and those that do exist do not collect all the information available in the different, dispersed, and little cohesive health structures of the public system and in addition the poor interconnection with private health entities just aggravates the problem. [11-15] On the other hand, the information collected often does not match with international nomenclature system and the deficit in technology and communications dragged on for centuries takes its toll on the credibility of the information collected. Without underestimating the human factor that lack of knowledge, experience, and lack of communication between municipal, regional, and national entities only worsen the current situation.

On the other hand, since the 1980s, rare diseases have been acquiring a priority place in health programs and in public opinion. In general, they are chronic, invalidating diseases and in more than 80% of genetic origin. Given the low specific prevalence of each condition, there is extraordinarily little knowledge on the part of the medical community in relation to its diagnosis and management and the impact at social, familial and society honestly is underestimated. [2,4,5].

Although some rare diseases may be detected quickly, in other cases years may pass between the first appearance of symptoms and a correct diagnosis of a rare disease, and misdiagnoses—and treatments based on them—occur with documented frequency. According to the literature GAO reviewed and GAO's interviews, those with undiagnosed, misdiagnosed, or untreated rare diseases may face various negative outcomes. For example, a person's health can suffer when appropriate, timely interventions are not provided or when interventions based on misdiagnoses cause harm. In addition, multiple diagnostic tests, medical appointments, and unwarranted interventions can add to the costs of the disease. [2,5,7,12].

People with rare diseases in underdeveloped countries suffer from stigmatization, depression and even persecution due to multiple social, religious, and other factors, for which their most basic rights continuously violated and discriminated against, leading to depression, humiliation, and many occasions suicide. There are no national programs or projects for the diagnosis, treatment, and protection of these patients.

In the scientific medical field, the lack of reference centers and qualified personnel, who are at the same time familiar with this type of ailment, is a handicap for the new generations of physicians who are not accustomed or prepared, familiar or prepared to face these diagnostic entities which In turn, they require very expensive studies, many of which are exclusive to developed countries, unjustifiably lengthening the time for diagnosis, worsening the prognosis and limiting the quality of life and social integration of these patients. Peer-reviewed studies of specific rare diseases estimated costs for people with rare diseases that are multiple times higher than costs for people without those diseases. One recent study, which has not yet been peer-reviewed, estimated $966 billion as the total cost (including medical and other nonmedical and indirect costs) in the United States for an estimated 15.5 million people with 379 rare diseases in 2019. [2,4,7,16-19].

In short, rare diseases in developing countries may not be so "rare", the rare thing is that there is the human, technical, social, and political capacity to address them in a comprehensive, holistic, and humanistic way. It is that this February 28th, when the WHO commemorates the day of rare diseases, not only take into account these patients who are already diagnosed, integrated or under treatment, but also help include all these people who suffer and will suffer rare diseases in their respective countries euphemistically called "developing" countries and for which there are no opportunities for diagnosis, treatment and social integration, due to the intrinsic economic, technical, human and scientific problems that chronically suffer.

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