



Scan to know paper details and
author's profile

Ovarian Surface Bleeding Following Transvaginal Oocyte Retrieval –

Dr. Rana A Choudhary & Dr. Kedar N Ganla

ABSTRACT

Complications following transvaginal oocyte retrieval (TVOR), although rare, need attention as it is an elective procedure. We present a case of ovarian surface bleeding, which we encountered post TVOR. Patient was diagnosed with intra abdominal blood collection noted on ultrasound along with a fall in hemoglobin. The ovarian surface bleed was from a “crater” on its surface which was cauterized successfully by laparoscopy.

Keywords: transvaginal oocyte retrieval (tvor), ovarian surface bleeding, ovarian surface bleed cauterization, hemoperitoneum, laparoscopy, ultrasonography, in vitro fertilization, fertility preservation.

Classification: NLMC CODE: WP 275

Language: English



LJP Copyright ID: 392861

London Journal of Medical and Health Research

Volume 20 | Issue 6 | Compilation 1.0



© 2020. Dr. Priyanka H Vora, Dr. Rana A Choudhary & Dr. Kedar N Ganla This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 4.0 Unported License (<http://creativecommons.org/licenses/by-nc/4.0/>), permitting all noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Ovarian Surface Bleeding Following Transvaginal Oocyte Retrieval – A Rare Complication

Dr. Priyanka H Vora^a, Dr. Rana A Choudhary^o & Dr. Kedar N Ganla^o

ABSTRACT

Complications following transvaginal oocyte retrieval (TVOR), although rare, need attention as it is an elective procedure. We present a case of ovarian surface bleeding, which we encountered post TVOR. Patient was diagnosed with intra abdominal blood collection noted on ultrasound along with a fall in hemoglobin. The ovarian surface bleed was from a “crater” on its surface which was cauterized successfully by laparoscopy.

Keywords: transvaginal oocyte retrieval (tvor), ovarian surface bleeding, ovarian surface bleed cauterization, hemoperitoneum, laparoscopy, ultrasonography, in vitro fertilization, fertility preservation.

Author: Reproductive Medicine Department, Ankoor Fertility Clinic, Mumbai, India.

Corresponding Author: Dr. Priyanka H Vora 274, Shakti Nivas, First floor, Block no 6, Deodhar Road, Matunga (CR), Mumbai – 400019.

I. INTRODUCTION

Hemoperitoneum due to trauma during oocyte retrieval is a dreaded complication of TVOR. Early diagnosis and treatment modalities pose a challenge to the clinician because of the paucity of cases encountered in the lifetime of treating clinicians. Salvaging the ovary plays a key role as these patients present mostly in the childbearing age having to undergo future fertility treatments.

II. CASE REPORT

A 28-year female, with 3 years of active married life and normal BMI was diagnosed with bilateral tubal block on diagnostic laparoscopy done for infertility. Her AMH was 3.2 with antral follicle count -18. Her baseline hormonal profile and

husband semen parameters were normal. The couple was counselled for In-vitro Fertilization and TVOR was performed. Her preoperative hemoglobin was 13.1 gm% with normal coagulation profile. Patient was not on any blood thinners prior to the procedure. Both ovaries were easily accessible & free of adhesions. Two punctures were made in the right ovary and one puncture in the left ovary. Fourteen oocytes were retrieved using a single lumen 17-gauge oocyte retrieval needle at a suction pressure of 100-110 mmHg. Immediate post procedure ultrasonography did not reveal any significant fluid collection. The patient presented with pain in the right iliac fossa after 48 hours. She was hospitalized for the same. Her blood pressure was 100/76 mm Hg & pulse rate 110 beats/min with slight pallor. Ultrasound revealed significant free fluid in the pouch of Douglas interspersed with sonolucent particles in which bilateral ovaries & bowel loops were found floating which raised the suspicion of hemoperitoneum [Fig 1]. Fluid collection was also seen in Pouch of Morrison. Her complete blood count was repeated which showed a drop in hemoglobin to 10.1 gm %. She was treated symptomatically. However, repeat hemoglobin at 72 hours showed a further drop to 8.3 gm%. Decision of emergency laparoscopy sos exploratory laparotomy with sos oophorectomy was taken and consented upon. On Laparoscopy 1 liter of hemoperitoneum was cleared by suction [Fig 2]. After clearing off the blood clots, there was no evidence of any major pelvic vessel trauma but both ovaries appeared bulky and fragile. The left ovary did not reveal any bleeder. But on gentle manipulation of the right ovary, the inferior surface of the ovary at the puncture point showed a crater whose edge bleed drop by drop. The bleeding edge was cauterized using bipolar cautery and hemostasis achieved [Fig 3]. Patient was given broad spectrum antibiotics & all embryos cryopreserved. Patient withstood the

procedure well & the post-operative recovery was uneventful.



Figure 1: Hemoperitoneum on Ultrasound with floating bowel loops



Figure 2: Hemoperitoneum seen on laparoscopy

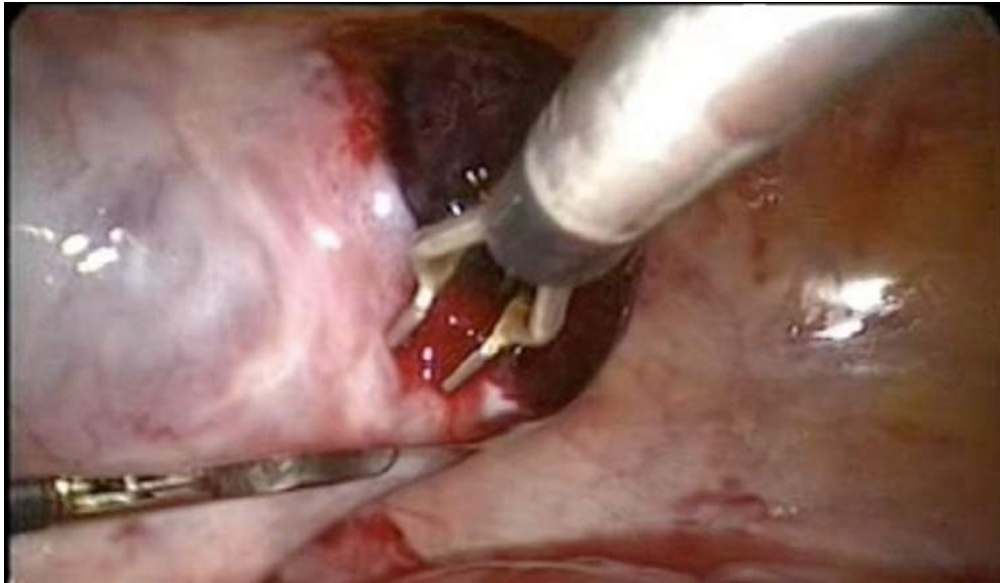


Figure 3: Bleeding crater being cauterised

III. DISCUSSION

TVOR is now the most widely accepted method of oocyte retrieval. Due to the established safety of the procedure, there are very few reported complications. All these structures contain small blood vessels with neighboring major blood vessels. Therefore, slight bleeding accompanying TVOR is normal. Minor bleeding occurs in 1.4-1.8

% & severe intra-abdominal bleeding in around 0.06%–1.3% patients ^[1]. Dessole et al. (2001) found that the normal estimated blood loss about 24 hours after oocyte retrieval is 230 ml ^[2]. The intraoperative findings can be classified into ‘diffuse bleeding’, ‘bleeding from follicle’, ‘puncture site’ or ‘localized’ which dictates the modality of management. Bleeding could occur hours to as late as 10 days after retrieval ^[3].

Table 1: Causes of ovarian surface bleed leading to hemoperitoneum following TVOR ^[4]

Sr No	High Risk Factors	Reason for Bleed	Damage Caused
1	Prolonged aPTT, factor VIII, XI or XII deficiency	Blood thinners before TVOR	Ooze of ovarian Surface Puncture Points
2	Highly fragile overstimulated ovarian tissue	Multiple punctures on ovarian surface	Damage to fine vascular network on ovarian surface & theca interna

3	<ul style="list-style-type: none"> • Inexperienced clinician <ul style="list-style-type: none"> • Lean PCOS • Enlarged stimulated ovary 	<ul style="list-style-type: none"> • Rough probe handling <ol style="list-style-type: none"> i. while entering ovarian surface or ii. while withdrawing needle • Lateral probe movement while ovarian entry • Blunted needle which was forced through 	Puncture Point Bleed/ Lacerated Ovarian Surface
4	Stimulated Ovary	Follicular bed flushing	Intrafollicular Bleed
5	Higher suction pressure	Raised Intraovarian Pressure	Crater on Ovarian Surface
6	Difficult ovarian access	<ul style="list-style-type: none"> • Abdominal manipulation of fragile ovary • Prolonged retrieval time 	Lacerated Ovarian Surface

In cases presenting with severe abdominal pain, nausea, vomiting, dizziness, weakness and tachycardia post TVOR, it is mandatory to consider hemoperitoneum as a differential diagnosis. Those with suspected bleeding after TVOR should be hospitalized and closely monitored with serial hemoglobin concentrations and ultrasonography to assess intra-abdominal fluid collection. Preventive measures for ovarian surface bleeding include.

- i. Color doppler ultrasound,
- ii. Lesser time for oocyte retrieval and being performed by an experienced personnel,
- iii. Lesser number of punctures over the ovarian surface,
- iv. Decreased manipulation of the ovary may help in minimizing chances of intraperitoneal bleeding ^[1].

The treatment of choice for clinically stable patients is conservative modality. Although if

hemodynamic deterioration continues or the patient is symptomatic, diagnostic laparoscopy is preferred with appropriate surgical management of the bleeding site (s) (Orvieto and Ben Rafael, 2012). Fertility preserving options include laparoscopic

- Ovarian Tear Coagulation
- Ovarian Tear Suturing
- Ovarian Vessel Cauterization
- Puncture Point Cauterization
- Hemostatic Sealant application.

In cases of intractable bleeding conversion to exploratory laparotomy with wedge resection of the ovary, embolization and even oophorectomy may be required ^[5].

Table 2: Review of Literature for hemoperitoneum following TVOR

Sr No	Etiology	Clinical Presentation	Days post TVOR	Treatment Modality	References
1	Ovarian Tear	Lower abdominal pain, dyspnea, hemoglobin drop	4	Laparoscopic Coagulation	Kart et al [1]
	Ovarian Surface Bleed	Severe abdominal pain, vomiting, vaginal bleed	10	Percutaneous Transcatheter Pelvic Angiography + Immediate Bilateral Uterine Artery Embolization	
2	Right Ovarian Puncture Point Bleed	Abdominal pain, rebound tenderness	7	Laparoscopic Absorbent sealant fibrinogen and thrombin application	Chatrian A et al [5]
3	Right Ovarian Capsule Tear	Lower abdominal pain dyspnea, pallor, tachycardia, Hemoglobin drop	3	Laparoscopic Vessel coagulation	Mashiach et al [3]
4	Left Ovarian Diffuse bleeding	Abdominal pain, orthostatic hypotension, tachycardia	1	Emergency Laparoscopy converted to laparotomy -Coagulation and suturing techniques	Kazem Nouri et al [4]

IV. CONCLUSION

Ovarian surface bleed handling may require insight and expertise to handle. The foresight of the clinician is of utmost importance for prompt diagnosis and management. Ovarian surface bleed cauterization at puncture point is an excellent method to salvage the ovary and preserve future fertility.

REFERENCES

1. Cavit Kart, Suleyman Guven, Turhan Aran, and Hasan Dinc. Life-threatening intraabdominal bleeding after oocyte retrieval successfully managed with angiographic embolization. *J Fertil Steril* 2011;96(2).
2. Salvatore Dessole, Giovanni Rubattu, Guido Ambrosini, Maddalena Miele, et al. Blood loss following noncomplicated transvaginal oocyte retrieval for in vitro fertilization. *J Fertil Steril* July 2001;76(1):205–206.
3. Mashiach R, Stockheim D, Zolti M, Orvieto R. Delayed intra-abdominal bleeding following trans-vaginal ultrasonography guided oocyte retrieval for in vitro fertilization in patients at risk for thrombo-embolic events under anticoagulant therapy. *F1000Res*.2013;2:189.
4. Kazem Nour, Katharina Walch, Regina Promberger, Christine Kurz et al. Severe Haematoperitoneum caused by ovarian

bleeding after transvaginal oocyte retrieval: A retrospective analysis and systematic literature review. *J reprod Biomed* December 2014;29(6):699-707.

5. Amélie Chatrian, Clémentine Vidal, Véronique Equy, Pascale Hoffmann et al. Hemoperitoneum presenting with the use of a topical hemostatic agent in oocyte retrieval. *J Med Case Rep.* 2012;6:395.