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Ovarian Torsion Managed Laparoscopically By Using Hot Dog Bun Stitch Technique: A Case Series

Dr. Kishore Pandit[1*], Dr. Shital Potdar[2], Dr. Sunita Pandit[3], Ms. Shravasti Pandit[4]
[1]Medical Director AiMS Hospital & Research Center, Aundh, Pune, Maharashtra, India
[2]Consultant Obstetrician and Gynecologist AiMS Hospital & Research Center, Aundh, Pune, Maharashtra, India
[3]Research Co-ordinator AiMS Hospital & Research Center, Aundh, Pune, Maharashtra, India
[4]II MBBS Student Smt. Kashibai Navale Medical College, Narhe, Pune, Maharashtra, India

***Corresponding author**
Dr. Kishore Pandit

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Abstract: Ovarian torsion is the partial or complete rotation of the adnexa around its ovarian vascular axis. It is one of the common gynaecological emergencies. Adnexectomy was traditional surgery for management of ovarian torsion. Laparoscopy is the surgical approach of choice as it has the advantages of a shorter hospital stay and reduced postoperative pain requirements. In the present case series we present findings of ten cases on ovarian torsion between the age group of 13 to 22 years. All cases were managed laparoscopically using unique approach of "Hot Dog Bunn Stitch" which is very effective in preventing recurrence.
Keywords: Ovarian torsion, gynaecological emergencies, Adnexectomy.

INTRODUCTION

Ovarian torsion is the partial or complete rotation of the adnexa around its ovarian vascular axis that may cause an interruption in the ovarian blood flow [1]. Ischaemia is therefore, a possible consequence and this may lead to subsequent necrosis of the ovary and necessitate resection. It is one of the common gynaecological emergencies. Huchon and Fauconnier had reported prevalence of ovarian torsion of 2.7% in all cases of acute abdominal pain [2]. Ovarian torsion has non-specific symptoms and variable, due to which this condition remains a diagnostic challenge with potential implications for future fertility [3].

Clinical suspicion and timely diagnosis and intervention are crucial for ovarian salvage [4].

Adnexectomy was traditional surgery for management of ovarian torsion especially in cases of ovarian necrosis or discoloration. It was mainly due to possibility of pulmonary embolism from untwisting of a potentially thrombosed ovarian vein. Due sacrificing of ovaries there was potential impact on the fertility of the patient. More conservative management by which ovaries can be salvaged has also been reported recently [4].

Review literature by Rody *et al*. suggested conservative management of ovarian torsion regardless of the macroscopic appearance of the ovary [5]. This ovary sparing approach after detorsion of ischaemic ovaries is considered safe and effective in both adults and children [6,7].

Laparoscopy is the surgical approach of choice as it has the advantages of a shorter hospital stay and reduced postoperative pain requirements [8,9].

In the present case series we present findings of ten cases on ovarian torsion between the age group of 13 to 22 years. All were unmarried. Most of the cases presented as excrucitating abdominal pain, sudden in onset; with or without associated nausea/ vomiting. All cases were managed laparoscopically using unique approach of "Hot Dog Bunn Stitch" which is very effective in preventing recurrence.

Operative Details

Preoperative procedure

Along with basic preoperative lab tests, all patients did abdominal sonography and colour doppler studies to confirm the adnexal torsion. Colour flow was seen to be compromised in all these cases on the affected side. All patients were counseled for the procedure and informed consent was obtained to do Laparoscopic management.

Inraoperative procedure

All operations were conducted under general anesthesia with endotracheal intubation. We utilized standard operative endoscope and camera. We used a supraumbilical 10 mm trocar for the telescope and two 5 mm trocars ipsilaterally on the left side for secondary punctures and operative instrumentation.

Pneumoperitoneum was achieved using CO2 insufflator and then bowels were retracted with a blunt grasper.

After we obtain clear view for pelvis, adnexa which appeared bluish black due to ischaemia and necrosis, were untwisted, and watched for the colour change. If the affected structures regained colour, atleast partially after untwisting it indicated viability. Further, lyses of any existing adhesions were done, to allow free mobilization and dissection of cysts. In case of ovarian cyst we proceeded to cystectomy.

Cystectomy

A grasper forceps was used to apply traction on ovarian ligament and steady the ovary. First, cleavage plane was created by harmonic scalpel. Next step is puncturing of ovarian cyst, aspirate the contents with suction.

A plane is widened between cyst capsule and stroma and blunt dissection is continued till the enucleation is complete. Grasping the edges of the cyst and slow traction apart will undress the cyst capsule and deliver the cyst out of its bed.

Eventually, the cysts were enucleated easily and hemostasis was performed for any bleeding spots encountered. During dissection in case spillage occurs, we immediately resort to vigorous jet wash suction irrigation using warm normal saline solution.

The evacuated cyst, together with its contents were shelled out from normal ovarian tissues and removed via trocar sleeve. Sometimes, we had to replace the 5 mm trocar to 10 mm one after dilatation of port entry to facilitate retrieval of tissues.

Hot dog double bun technique

The elongated ovarian ligament is now shortened by hot dog double bun stitch. In this method, a figure of 8 stitches is taken around the ovarian ligament horizontally, using vicryl no. 1. This is ovarian ligament plication.

This stitch is further hitched upwards to the ipsilateral round ligament, thus suspending the adnexa to it. In this step it is of utmost importance to exclude the fallopian tube from it.

Advantages

This step prevents recurrence. Prophylactic plication of contralateral side may be done, if that ovarian ligament appears elongated as well. Then saline wash is given and hemostasis is confirmed. Then diagnostic laparoscopic inspection was conducted thoroughly to evaluate the pelvis and upper abdomen.

Port closure is done

Post-operative care

Bed rest, antibiotics, analgesics, antacids, iv fluids. Patients received anti-infective therapy including amoxclav 1.2gm IV bid and metronidazole 0.5 g IV bid for 2 consecutive days. Semiliquid diets start 12 hours after the operation. Normal diet starts according to the conditions of functional recovery of gastrointestinal function. Urethral catheters were routinely removed on the first postoperative day. Repeat ultrasonography for ovarian blood flow 24 hours after surgery was done. Patients were discharged after 30-36 hours of the procedure and follow up after 7 days was uneventful.

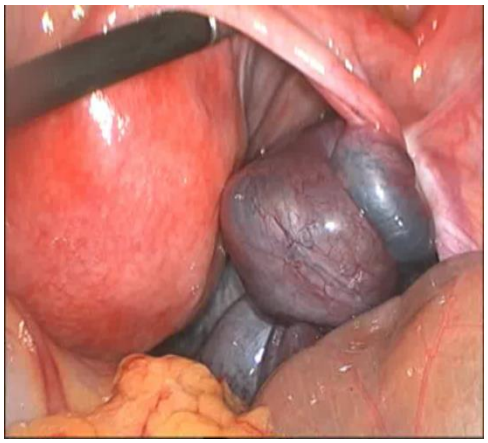

Fig-1: Twisted Adnexa

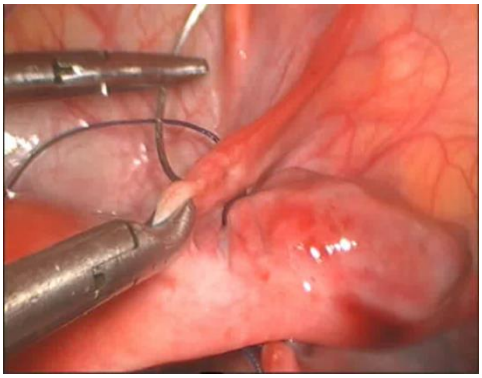

Fig-2: Ovary hitched to round ligament

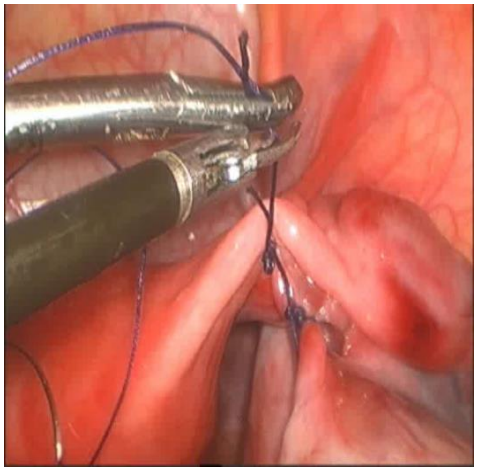

Fig-3: Hot Dog Bun Stitch Completed

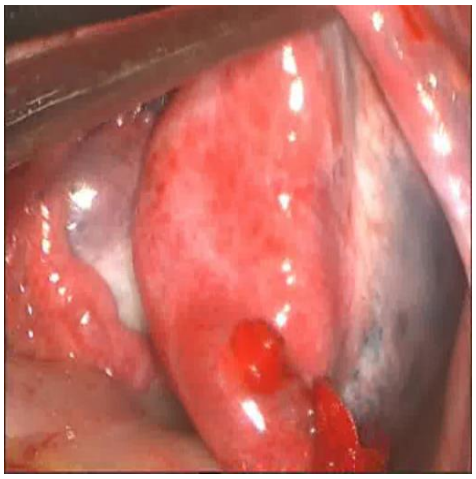

Fig-4: Adnexa regained blood supply

DISCUSSION

No age is immune to ovarian torsion, but it tends to present more at reproductive age years, and during pregnancy, and represents one of the top causes of gynaecological emergencies. Difficulty to diagnose, and similar non-gynaecologic presentations, makes the exact prevalence less clear [10].

The normal mobility of the fallopian tube can lead to rotation of the ovary along with its vasculature. This leads to the obstruction of venous outflow, infarction and eventual necrosis, infection, peritonitis or loss of the adnexa. This is especially dangerous in young children, as the entity can go unrecognized because of its rarity and the no specificity of its presentation. Ovarian torsion in children is an uncommon cause of acute abdominal pain but mandates early surgical management to prevent further adnexal damage [11].

In the present case series we effectively managed all cases laparoscopically using unique

approach of "Hot Dog Bunn Stitch" which is very effective in preventing recurrence.

CONCLUSION

Ovarian torsion is a rare cause of abdominal pain and can result in infarction of the ovary and fallopian tube and should be considered in any girl or woman with acute onset lower abdominal pain accompanied by vomiting. Surgical management with "Hot Dog Bunn Stitch" was found to be very effective in preventing recurrence can be used as one of the essential options while management of such cases.

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