Laparoscopic Management of Tubo-Ovarian Stitch Abscess after Tubal Sterilization

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ABSTRACT

Tubo-ovarian abscess usually results from ascending infection of the lower genital tract. In few cases, it can occur as a result of direct contamination at the time of tubal sterilization. We describe two rare cases of "tubo-ovarian stitch abscess" after post-partum tubal sterilization and managed successfully by laparoscopy at a tertiary care teaching hospital.

Key words: Tubal sterilization, tubo-ovarian stitch abscess, tubal abscess

INTRODUCTION

Pelvic inflammatory disease that follows tubal sterilization is very rare and the development of tubo-ovarian stich abscess is even rarer. We describe two such cases of "tubo-ovarian stich abscess" developed following tubal sterilization.

CASE REPORTS

Case 1

A 35-year-old woman presented with a painful palpable mass, in the right lower abdomen since 15 days. The pain was dull aching, continuous, and non-radiating. There was no history of nausea or vomiting. There was no history of leucorrhea. The patient had undergone tubal sterilization 3 months back at a government hospital. Following surgery, the patient had intermittent pain and fever. Patient was treated with intravenous fluids and antibiotics for 7 days at a private hospital, with a diagnosis of appendicular mass, with no response. Patient was referred to us for further management. Abdominal examination revealed a tender mass in the right iliac fossa and on pelvic examination, uterus was bulky and there was tenderness in the right fornix of vagina. Rest of the clinical examination was normal.

The laboratory findings showed leucocytosis and plain abdominal radiographs were normal. Abdominal ultrasonography showed a hypo-echoic mass lesion 6 × 5 cm just lateral to the cecum, adherent to the anterior abdominal wall; the right tube and ovary were congested and thickened; minimal fluid was present around the mass. Sonologist gave a differential diagnosis of appendicular mass or tubo-ovarian mass. Diagnostic laparoscopy was carried out, which revealed a mass in the right iliac fossa, where caecum, right fallopian tube, and ovary were densely adherent to the anterior abdominal wall. The appendix was congested and adherent to the mass but was not involved in the mass formation [Figure 1]. There was no evidence

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of appendicular perforation. When we carefully separated the cecum from the anterior abdominal wall, we found a small abscess cavity, in the vicinity of right tube and ovary. Suction irrigation of abscess cavity was carried out with copious amount of saline. Along with the pus, we found two loops of sutures in the abscess cavity, which were also removed and sent for culture. Appendicectomy was also carried out as it was congested and adherent to the mass. A drain was kept. Patient received injection Cefotaxime 1 mg twice a day and injection Metrogyl 400 mg 3 times a day, for 5 days. The drain was removed on the 3rd post-operative day and the patient was discharged on the 5th post-operative day. The suture culture grew Streptococcus intermedius and the histo-pathological findings of appendix showed inflammation in the serosa and subserosal layer with normal mucosa.

Case 2

A 28-year-old woman presented with intermittent fever and pain in the right lower abdomen since 10 days. The pain was dull aching, continuous, and radiating to perineum. She had nausea and vomiting associated with loss of appetite. She had undergone tubal sterilization 5 months back at a private hospital. Following surgery the patient used to have intermittent pain. She was treated with antibiotics and intravenous fluids at a private hospital for 6 days with no response and then was referred to us for further management. Abdominal examination revealed a slightly tender mass in the right iliac fossa and pelvic examination revealed bulky uterus and tenderness in the right fornix. Rest of the clinical examination was normal.

The laboratory findings and plain abdominal radiographs were normal. Abdominal ultrasonography demonstrated a 3 × 5 cm hypo-echoic mass lesion, supero-lateral to the uterus. The right tube and ovary were congested and thickened. Minimal fluid was present around the mass. Diagnostic laparoscopy was carried out, which revealed a complex mass with abscess, in the right iliac fossa, formed by omentum, right tube, ovary, and cecum. Omentum was densely adherent to the right tube and ovary and could not be separated. Suction irrigation was carried out. One loop of suture was retrieved from the abscess cavity and sent for culture. The infected complex mass was excised [Figure 2].

A drain was kept. Patient received injection Cefotaxime 1 mg twice a day and injection Metrogyl 400 mg 3 times, for 5 days. Drain was removed on the 2nd post-operative day and patient was discharged on the 5th post-operative day.

Suture culture grew *Staphylococcus aureus* and histo-pathological examination revealed chronic inflammation of the right tube and omentum, with foreign body granuloma, with no evidence of tuberculosis.

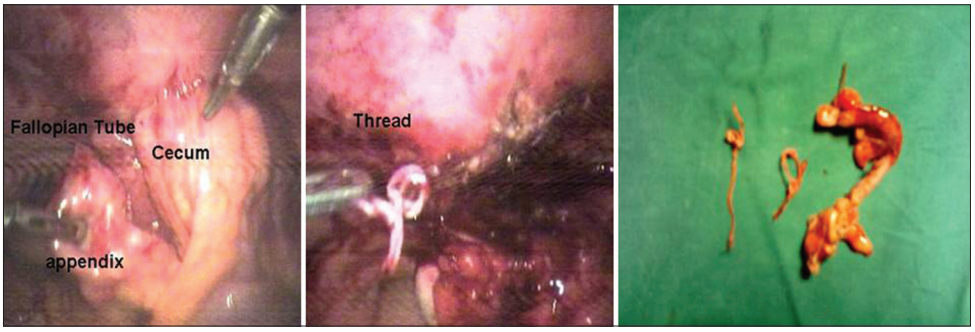

Figure 1: Complex mass involving appendix, cecum, right fallopian tube with embedded suture

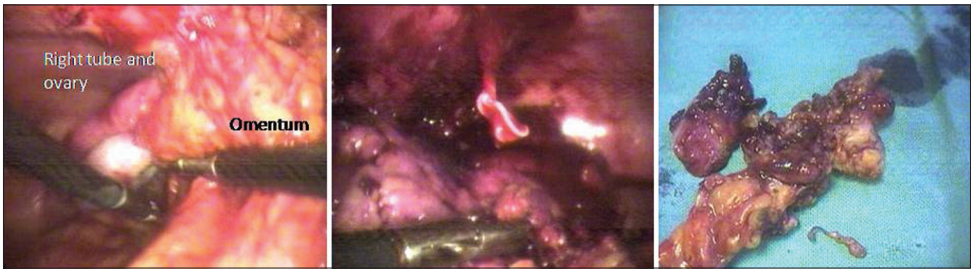

Figure 2: Right tubo-ovarian mass involving omentum, right tube and ovary

DISCUSSION

Pelvic inflammatory disease and development of tubo-ovarian abscess (TOA) has long been regarded as an uncommon rare complication following tubal sterilization[1,2] and tubo-ovarian stitch abscess is even rare. The predominant theory on TOA formation postulates that an ascending infection from the cervix, through the uterus, to the fallopian tubes, and ovaries results in abscess formation. Other theories include seeding via a hematogenous infection, diverticular disease and appendicitis.

TOAs are polymicrobial infections of anaerobic and aerobic bacteria. While Neisseria gonorrhea and Chlamydia trachomatis are thought to facilitate the infection, they are rarely recovered from an abscess.[3,4] The most commonly isolated organisms from TOAs are *Escherichia coli* and *Bacteroide*s species. Other bacteria isolated from these abscesses include, *Peptostreptococcus, Peptococcus* and aerobic *Streptococci*.[5-7] *Staphylococcus* species are not commonly found in TOA, though have been previously described.[3,8] *Staphylococcus epidermidis* is frequently part of the normal vaginal flora but *S. aureus* is associated with serious hospital-acquired infections such as post-operative wound abscesses.

Forty-five percentages of patients who were surgically treated for TOA, suffered from a unilateral abscess. TOAs that occurred as a complication of a gynecologic operation or after delivery were mostly unilateral[1,9] and they are more common in nullipara. It's peak incidence is in the fourth decade of life.[10] Only 1.5% of TOA occurs after menopause.[3,11] In the post-operative setting, following gynecological surgery, symptoms of TOA appear between 6 and 133 days[3] and even after 7 years.[8]

The Pomeroy's technique of tubectomy is the preferred method for surgical female sterilization. A single strand of absorbable suture material (1-0 catgut) is recommended for tubal ligation,[12] but in some of the hospitals, surgeons still are using non-absorbable suture material for tubal ligation, which is not recommended. Patient-to-patient transmission of HIV in private surgical consulting rooms by re-use of suture material has been described by Chant *et al.*[13]

Non-absorbable sutures are made of materials, which are not metabolized by the body. Capability of bacteria to adhere to various types of sutures has a significant effect on their ability to cause infections. Nylon bound the least bacteria while bacterial adherence to braided sutures (silk, cotton thread) was 5 to 8 folds higher.[14]

S. aureus is known to cause other chronic indolent infections even after pelvic surgeries like cesarean section and tubal ligation,[8,15] which last many years. We may speculate that in our cases the micro-organisms might have gained access to the patients' right adnexa via contaminated suture material during tubal ligation or re-use of suture or gloves and have caused a subacute formation of pelvic abscess.

CONCLUSION

Re-use of suture material is not recommended and sterile absorbable suture like catgut should be used for tubal ligation. Strict aseptic precautions should be taken during the surgery.

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