

# Ruptured Endometrioma Presenting as Acute Abdomen with Highly Raised Serum CA-125 Levels: A Case Report

ANAGHA KAMATH

## ABSTRACT

A 35 yr old lady, para 2, living 2, with 2 previous caesarean sections, presented with the features of acute abdomen. The clinical and laboratory evaluations revealed a bilateral ovarian mass with solid and cystic components, with raised serum CA-125 levels and raised ESR. The differential diagnosis included abdominal

or genital tuberculosis, secondary carcinoma of the ovaries and endometriomas. This case is being reported and discussed in detail, for which an emergency exploratory laporotomy was performed. The intraoperative features suggested the diagnosis of spontaneous peritonitis which was secondary to ruptured b/l ovarian endometriomas.

**Key Words:** Endometriosis, Endometrioma, CA-125, Acute Abdomen, Peritonitis

## CASE REPORT

A 35yr old lady who hailed from Chikmagalur India, a labourer by occupation, para 2, living 2, with 2 previous 2 LSCS, presented on the third day of her menstrual cycle, with complaints of abdominal distension, nausea, vomiting, breathlessness since 2 days; low grade, mild and intermittent fever since 1 month; oligomenorrhoea and lower abdominal pain which was mild and intermittent, since 6 months. On examination, she was found to be afebrile, had tachypnoea and tachycardia, was normotensive; had normal cardiovascular and respiratory systems; her per abdomen had the features of abdominal distension, guarding, rigidity, tenderness in the right iliac fossa, shifting dullness and sluggish bowel sounds. The per speculum examination revealed bleeding through the os with a normal vagina and cervix; her per vaginal examination revealed a normal sized uterus, fullness in the right fornix and presence of the pouch of Douglas. Her per rectal examination confirmed the fullness in the pouch of Douglas.

On further investigating, her blood tests showed leukocytosis of 15,000, neutrophilia, ESR of 37, normal liver and renal function tests and urine pregnancy test was negative. The ultrasound of abdomen and pelvis depicted a bilateral adnexal mass with solid and cystic components, the right ovary measured 7.4\*3.4cm, there was fluid in the pouch of Douglas and ascites. The serum CA-125 level was 1625units; her Beta human chorionic gonadotrophin level was 0.9units, and alpha feto protein AFP level was 2.63 units.

The high CA-125 levels raised the suspicion of an ovarian malignancy. After taking clearance from the physician, the surgeon and the anaesthetist, an emergency exploratory laporotomy was performed, wherein the chocolate coloured fluid was drained from the peritoneal cavity and sent for cytology. Her bowel exploration revealed no abnormality and she had a left ovarian mass of 7\*6cm and a right ovarian mass of 4\*3cm. Adhesions were also present in her uterus, urinary bladder and rectum. The adhesions were released, a total abdominal hysterectomy with bilateral salpingo oophorectomy was done and the tissues were sent for histopathological studies to the Department of Pathology, Kasturba Medical College, Mangalore.

## HISTOPATHOLOGY

The histopathological studies reported features which were suggestive of endometriomas. The ascitic fluid was negative for malignant cytology.

## DISCUSSION

Endometriosis is defined as the presence of endometrial glands and stroma outside the normal location, which are most commonly found in the pelvic peritoneum, but may also be found in the ovaries, the rectovaginal septum and the ureters, but rarely in the bladder, the pericardium and the pleura. Endometriomas are the cystic endometrial lesions which are contained within the ovaries. The spontaneous rupture of an endometriotic cyst is very rare. Very few cases have been reported till now and most of them have been associated with pregnancy [1]. The rupture of an endometriotic cyst is one of the representative acute gynaecological disorders which are manifested by acute abdominal pain and inflammatory reactions [2]. This frequently induces elevations in the body temperature, the WBC count and the serum CRP levels, all of which are acute inflammatory reactions. These inflammatory responses are considered to be induced by the content of an ovarian endometriotic cyst. Since abdominal pain is a major symptom in this case, the differential diagnosis from any underlying intestinal disease is often necessary, and infectious diseases in the adnexa should also be ruled out.

In our present case report, a 35yr old lady presented with chronic symptoms of 6 months duration, which was superimposed by an acute abdomen of 2 days duration. Acute abdominal pain, with a history of fever, with a guarding rigidity with leucocytosis, suggested peritonitis. Clinically, the differential diagnosis included abdominal or genital tuberculosis, carcinomas in the gastro-intestinal system or in the ovaries and endometriomas.

The investigations revealed leukocytosis, raised ESR, very high serum CA-125(1625IU/ml) levels, bilateral ovarian masses with ascites which pointed out more towards the secondaries in the ovaries or ruptured chocolate cysts with peritonitis or peritonitis which was secondary to bowel perforation. Intraoperatively, the features of a chocolate to brownish coloured fluid in the peritoneum

and the bilateral ovarian cysts clearly suggested the diagnosis of spontaneous peritonitis which was secondary to ruptured, bilateral ovarian endometriomas with raised serum CA-125 levels.

Serum CA 125 is the gold standard tumour marker for the evaluation of pelvic masses. Distinguishing the benign conditions from the malignant standard cut off of 35 IU/ml (the normal range being 0-35 IU/ml) can be misleading, especially in menstruating women and hence, a cut off from 65 to 200 IU/ml is necessary. The levels of CA-125 which are > 65 U/mL, correlate highly with ovarian malignancies and distinguish the malignant diseases from the benign diseases, with a specificity of 88 to 92% and a sensitivity of 75% to 83% [1]. Plasma CA-125 levels which are > 194 U/mL are considered as a positive criterion for differentiating the malignant pelvic masses from the benign pelvic masses [2].

Serum CA-125 measurement is now a consolidated method for diagnosing endometriosis, but its interpretation has posed a number of problems, particularly its utility in diagnosing minimal-mild endometriosis, whereas its value as a diagnostic aid in the moderate-severe stages is well recognized. The serological testing for CA125 has been widely used not only to detect endometriosis, but also to monitor its progression [3] [4]. The patients with endometriosis rarely have CA-125 levels which are >100 IU/ml. However, endometriosis constitutes a major non-malignant gynaecological disease wherein the serum CA-125 levels are in the malignancy range (>1,000 IU/ml) [5]. The severity of endometriosis has been shown to be positively correlated with elevated CA-125 levels. Serum CA-125 is significantly elevated with respect to the ovarian and mixed endometriosis lesions in comparison with the exclusive extraovarian foci [6].

The CA-125 levels are reported to rise immediately after the rupture of an endometriotic cyst and also following malignant transformation [7]. An explosive rise of the serum CA-125 levels to up to 9300 IU/ml following the rupture of ovarian endometrioma has been reported [8]. The sudden release of endometriotic cyst fluids containing very high concentrations of CA-125, combined with pelvic peritoneal irritation, may contribute to the unusual rise of the serum CA-125 levels. This is the highest value which has been reported so far with histologically confirmed endometriosis. However, Kahraman A et al reported a 25-year-old woman with unruptured unilateral endometrioma and stage IV endometriosis, with extremely elevated serum CA-125 levels of 7,900 U/mL [9]. This case demonstrated that abnormally high levels of plasma CA-125 may be encountered in large ovarian endometriomas without rupture and without the overflow of the thick, "chocolate" cyst fluid throughout the abdominal cavity. Chii-Shinn Shiau et al reported CA125 levels of 6310 IU/ml with an unruptured endometrioma [10].

The consensus conference recommendations from an expert panel of gynaecologists in the US stated that hysterectomy with

bilateral salpingo oophorectomy. BSO, which was reserved for females with symptomatic endometriosis, completed child bearing and recognized the risk of premature hypo-oestrogenism, including possible osteoporosis and decreased libido [11], which justifies our management in this case.

## CONCLUSION

Ovarian endometrioma and endometriosis may present acutely and they may be associated with extremely elevated serum CA-125 levels. For this reason, ovarian endometrioma should be considered with respect to the differential diagnosis of reproductive-age women who present with an acute abdomen and an ovarian mass, even if it resembles an ovarian malignancy. Moreover, very high CA-125 levels do not necessarily forebode an ovarian malignancy.

## ACKNOWLEDGEMENT

I acknowledge the surgical and nursing staff of Wenlock and Lady Goshen Government Hospitals, Mangalore; and the Department of Pathology, Kasturba Medical College, Mangalore, without whose help this work would not have been possible. The unyielding support of the patient and her family has always been with me.

## REFERENCES

- [1] Garcia Verasco JA, Alvarez M, Parumbo A et al. Rupture of an endometrioma during the first trimester of pregnancy. *Eur J Obstet Gynecol Reprod Biol* 1998; 76:41-43.
- [2] Pratt JH, Shamblin WR. The spontaneous rupture of the endometrial cysts of the ovary which presented as an acute abdominal emergency. *Am. J. Obstet. Gynecol* 1970; 108: 56-62.
- [3] Cheng YM, Wang ST, Chou CY. Serum CA-125 in preoperative patients who are at a high risk for endometriosis. *Obstet Gynecol*. 2002; 99 (3):375-80.
- [4] Rosa E Silva AC, Rosa E Silva JC, Ferriani RA. Serum CA-125 in the diagnosis of endometriosis. *Int J Gynaecol Obstet*. 2007; 96:206-7.
- [5] He RH, Yao WM, Wu LY, Mao YY. Highly elevated serum CA-125 levels in patients with non-malignant gynecological diseases. *Arch Gynecol Obstet*. 2011;283:107-10.
- [6] Patrelli TS, Berretta R, Gizzo S, Pezzuto A, Franchi L, Lukanovic A et al. CA 125 serum values in surgically treated endometriosis patients and their relationship with the anatomic sites of endometriosis and the pregnancy rate. *Fertil Steril* 2011; 95:393-6.
- [7] Check JH. CA-125 as a biomarker for the malignant transformation of endometriosis. *Fertil Steril*. 2009; 91:e35; author reply e36. Epub 2009 Mar 31.
- [8] Johansson J, Santala M, Kauppila A. The explosive rise of serum CA 125 following the rupture of ovarian endometrioma. *Hum. Reprod* 1998; 13:3503-3504.
- [9] Kahraman K, Ozguven I, Gungor M, Atabekoglu CS. Extremely elevated serum CA-125 levels as a result of unruptured unilateral endometrioma: the highest value reported. *Fertil Steril*. 2007; 88: 968.
- [10] Shiau CS, Chang M Y, Chiang CH, Hsieh CC, Hsieh TT. Ovarian endometrioma which was associated with very high serum CA-125 levels. *Chang Gung Med J* 2003; 26:695-699.
- [11] Gambone J C, Mittman B S, Munro M G, Scialli AR, Winkel CA et al. A consensus statement for the management of CPP and endometriosis. Proceedings of an expert panel process. *Fertil Steril* 2002; 78:961.

### AUTHOR(S):

1. Dr. Anagha Kamath

### PARTICULARS OF CONTRIBUTORS:

Assistant Professor, Department of Obstetrics and Gynaecology  
Kasturba Medical College, Mangalore.

### NAME, ADDRESS, TELEPHONE, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Anagha Kamath, Assistant Professor  
Department of Obstetrics and Gynaecology,  
Kasturba Medical College, Behind Leo Furnitures,  
Karangalpaday, Mangalore.

### DECLARATION ON COMPETING INTERESTS:

No competing Interests.

Date of Submission: **May 05, 2011**

Date of peer review: **Jul 19, 2011**

Date of acceptance: **Jul 29, 2011**

Online first: **Aug 24, 2011**

Date of Publishing: **Oct 05, 2011**