

## Laparoscopic removal of a giant paratubal cyst complicated by hydronephrosis

V. LEANZA, L. COCO, F. GENOVESE, C. PAFUMI, L. CIOTTA, G. LEANZA,  
G. ZANGHÌ, E. INTAGLIATA, R. VECCHIO

**SUMMARY:** Laparoscopic removal of a giant paratubal cyst complicated by hydronephrosis.

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*Paratubal cysts represent approximately 10% of all adnexal masses.*

*In most cases they are very small, but very few cases are reported in the literature where they exceed 15 cm of diameter. Furthermore, giant paratubal cysts complicated by bilateral hydronephrosis are unique.*

*The Authors describe a case of a huge paratubal cyst (30 cm in diameter), in a 14 year old obese girl, treated by complete laparoscopic enucleation.*

KEY WORDS: Mesonephric cyst - Paratubal cyst - Hydronephrosis - Laparoscopy.

### Introduction

Paratubal or paraovarian cysts represent approximately 10% of all adnexal masses (1, 2). They usually derive from the mesothelial covering of the peritoneum or from paramesonephric and mesonephric remnants, so they are covered by a single layer of ciliated columnar or flattened cells (3). A paratubal cyst is a closed, fluid-filled sac that grows beside or near the ovary and Fallopian tube, but is never attached to them. It is located at the ligament between the uterus and the ovary, and usually it is unilateral and benign.

These cysts are in most cases very small (ranging from 2 to 20 mm), occurring asymptotically as incidental findings during other pelvic examinations or surgery. Giant paratubal cysts are rare and only few cases have been reported in the literature.

The Authors describe a unique case of a giant paratubal cyst of 30 cm in diameter, complicated by hydronephrosis, removed conservatively by the laparoscopic surgical approach.

### Case report

An obese 14-year old virgin girl presented at our Department with gradually increasing abdominal swelling first noticed 1 year before. Abdominal distension was accompanied with vague abdominal symptomatology from 3 months with localized pain in the right hypochondrium started one month earlier. There was no history of colic pain, vomiting or other gastrointestinal disturbances. Bowel and bladder functions were normal. There was no anorexia, weight loss or weakness. She had regular menstruations at intervals of 25-28 days, lasted for 5-6 days, associated with mild dysmenorrhea.

At abdominal examination, a smooth tense cystic mass arising from the pelvis and extending to the mesogastric region could be palpated. The mass was neither mobile nor tender. Rectal examination showed a large mass compressing bladder, uterus and rectum. At ultrasound scanning, uterus was normal in size and shape, right ovary was rounded by an 30 cm size homogeneous anechoic cyst. Left ovary was normal, with 1 cm anechoic structure. The huge cyst arising from the pelvis and occupying the whole abdomen, pressed both ureters and caused bilateral hydronephrosis, more evident on the right renal pelvis. These findings were confirmed by magnetic resonance imaging (Figure 1).

Preoperative investigations, including the renal function tests and the serologic oncological markers [beta-human chorionic gonadotropin (b-HCG), CA-125, CA 15-3, CA 19-9, carcinoembryonic antigen (CEA), and alfa-phetoprotein] were normal, reflecting the benign origin of the cyst (4). Because of the mass effect with compression to the adjacent organs and the benign nature of the lesion, the patient was scheduled for laparoscopic surgery.

A Hasson - trocar was introduced through a 1-cm umbilical incision, and other two 5-mm trocars were inserted in the lower abdominal quadrants. The leaves of broad ligament were separated and the limit of the giant cyst was identified. After its aspira-

University of Catania, Catania, Italy  
Department of Surgery

Correspondence to: Eva Intagliata, [evaintagliata@vodafone.it](mailto:evaintagliata@vodafone.it)

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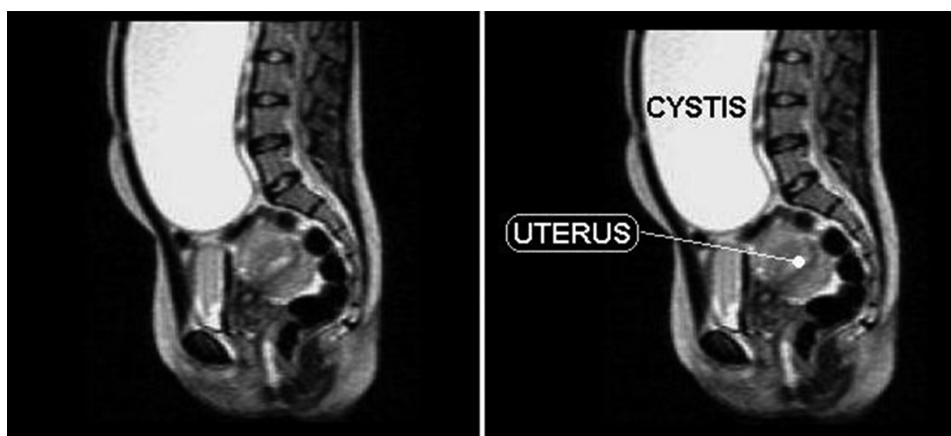


Fig. 1 - Magnetic resonance imaging showing a giant paratubal cyst.

tion, the cyst was enucleated with preservation of residual ovarian parenchyma and tube. Exploration of the abdominal cavity, and particularly of the uterus, was normal. The other adnexa presented a little paraovarian cyst (1 cm), which was also removed. Both the cyst were pulled out through the umbilical incision, after insertion in an endobag and fluid aspiration from the larger cyst. Preservation of both ovary and tube was accomplished. Intra- and post-operative course was uneventful, and the patient was discharged three days after surgery. After 1 week, hydronephrosis disappeared completely.

Histological report confirmed the diagnosis of paramesonephric cysts.

## Discussion

Small paratubal cysts are most commonly found in middle-aged women (30 to 40 years of age), and are often indistinguishable from simple ovarian cysts. Most paramesonephric cysts remain small and asymptomatic, do not require treatment, and sometimes they disappear on their own.

Paratubal cysts can sometimes become larger especially in younger women, and develop symptoms, because they can compress the bladder, uterus or bowel, causing pelvic tenderness, usually unilateral, abnormal uterine bleeding, and dyspareunia.

When the cyst is larger than 10 cm, increasing in size, complex, solid, dense, irregularly shaped, or infected, bleeding or ruptured, surgery is required.

Hydronephrosis is a consequence of compression on the ureters, and could be mono- or bilateral. In the reported case, bilateral hydronephrosis complicated the cyst and owing to the main extent of the cyst on the right side, hydronephrosis was more evident on the right kidney. Because persistent dilatation of renal pelvis could damage the renal function, prompt surgical treatment of the cyst is mandatory to prevent renal complications (5).

The cysts can be checked through abdominal palpation or vaginal bimanual examination. The ultrasound

scan is used to diagnose the mass, and to define its location. Computerized tomography is useful to clarify the diagnosis, but the risk of radiation exposure must be considered. In case of diagnostic doubts, the magnetic nuclear resonance is preferable to clarify the diagnosis, avoiding radiation damage on the ovary, especially in young girl.

Traditional midline laparotomy has been the conventional surgical approach for the removal of giant ovarian and paratubal cysts. Oophorectomy or tubal excision is sometimes required (1). Because of the well-recognized advantages of the laparoscopic procedures (6-10), recently giant ovarian cysts have been managed by the mini-invasive approach. Advantages of the laparoscopic procedures include fewer incisions, short hospital stay, quick patient's recovery and in some abdominal procedures, a better view of the operative field (11, 12). Because of magnification of the image in laparoscopy this feature may allow a better chance to preserve ovary and ovarian tube, especially in cyst located closely to these structures, which otherwise cannot be achieved (13, 14).

In our case, laparoscopic approach, allows preservation of both ovaries and tube avoiding iatrogenic lesion to the ureter, and preserving patient's fertility (15, 16).

Preservation of the pelvic organs, while performing the laparoscopic paraovarian cystectomy, is in our opinion, advantageous for young nulliparous patients, in order to preserve their fertility.

## Conclusion

Giant paraovarian cyst, after preoperative diagnostic work-up which excludes its malignant origin, can be successfully treated through laparoscopic surgery with preservation of the adnexum.

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