

# Review on Ovarian Remnant syndrome

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## Introduction

Ovarian remnant syndrome (ORS), a rare condition in which remnant ovarian tissue presents as a pelvic mass and/or pain after previous oophorectomy. It is caused by incomplete removal of ovarian tissue at the time of initial oophorectomy from inability to obtain adequate surgical margins or inappropriate extraction from the pelvic cavity during laparoscopy (1).

Responding to hormonal stimulation, the remaining piece of functional ovarian tissue can have growth, cystic degeneration, or haemorrhage (2). Risk factors associated with incomplete removal of an ovary and subsequent development of ORS includes a history of endometriosis, pelvic inflammatory disease, multiple previous surgeries, altered anatomy and pelvic adhesive disease. As many patients may have previous laparotomies to remove the ovaries, so it is not uncommon to find the remnant ovaries embedded in dense adhesions or attached to the vaginal cuff following a hysterectomy.

## Diagnosis

The diagnosis of ORS is not always straightforward and should be considered in the differential diagnosis of pelvic pain with or without a mass in a patient who has had extirpative surgery (3). The symptoms usually occur within 5 years of oophorectomy (4; 5). The most frequent symptom is chronic pelvic pain, being described as both cyclic and/or acyclic. In addition, patients characterize the pain as dull and aching to sharp and stabbing (5). They may also experience low back pain, variable bowel symptoms, dyspareunia, and pelvic mass or ureteral compression (4).

Pelvic pain may be associated with a pelvic mass, or could be an asymptomatic one. The pelvic mass could be palpable on bimanual examination, or visible on transvaginal ultrasound CT scan or MRI to identify any ovarian tissue or pelvic mass. However, visualization of an ovarian remnant is sometimes difficult owing to being small and the multiple previous pelvic operations that usually produced dense adhesions and distorted pelvic anatomy (fig. 1). Identification of these remnants may be facilitated by ovarian stimulation (6).

Also, measuring blood levels of follicle-stimulating hormone and estradiol may be helpful to establish the diagnosis in women with previous bilateral oophorectomy. Nevertheless, the definitive criteria for diagnosis of ORS include a history of oophorectomy with histologic documentation of ovarian tissue obtained during subsequent surgical excision (7).



*Fig. 1: Remnant ovary embedded in dense adhesions*

## **Prevention**

The prevention of the ORS is based on rigorous surgical treatment during the oophorectomy so as not to leave behind ovarian tissue (8).

## **Treatment**

### **Medical**

Medical therapy is empiric, and hormonal manipulation may help prevent recrudescence and may provide temporary relief of pain (3) (6).

### **Surgical**

Surgical excision by laparotomy or, laparoscopy remains the treatment of choice in ORS .The goal is complete resection of the ovarian tissue to prevent recurrence. Malignancy can be associated with the remnant tissue.

Surgical removal of the remnant ovaries itself could be technically difficult and could be associated with serious complications as the remnant may be adherent to the bowel, bladder or even the ureter. In cases of endometriosis, complete excision of endometriosis and ovarian tissue at the time of initial surgery prevents recurrence of endometriosis, subsequent development of ORS and possible ovarian malignant transformation (1) (7).

Laparoscopy offers additional benefits over laparotomy for treating ovarian remnants. The magnification provided by the laparoscope facilitates identification of the remnant tissue. Increased intra-abdominal pressure helps reduce blood loss, is less traumatic, and the distension causes the retroperitoneal space to unfold, thus allowing for better visualization (9; 10). It is recommended that all women should have a bowel preparation before the surgery due to high risk of intra and post-operative complications i.e. bowel injury. Anterior abdominal wall adhesions are common with prior surgeries, and an open laparoscopy, left upper quadrant entry, or mapping technique may be advisable (11). The incidence of injury to the bladder, ureter, and bowel at laparotomy for ovarian remnant is estimated to be 3% to 33%, with injuries to the ureter significantly greater by laparotomy than by laparoscopy (9).

## Conclusion

Ovarian remnant syndrome a rare condition in which remnant ovarian tissue left after previous oophorectomy. It could present with pelvic mass and/or pelvic pain. It should be considered in the differential diagnosis of pelvic pain with a mass in women who had previous laparotomy. Although empiric hormonal treatment may be considered, surgical excision remains the main line of treatment.

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