

# A Groin Lump – Canal of Nuck ‘Endometriocoele’: Case Report

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## Citation

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## Abstract

We report a case of a young healthy lady presenting with a reducible tender right groin lump, which was well seen on the first surgical visit and vaguely defined on the subsequent visit. Abdominal ultrasonography reported as a cystic swelling at the right suprapubic area without obvious communication with the peritoneal cavity. She had a history of dysmenorrhoea since puberty and had been diagnosed with endometriosis three years ago with regular gynaecological follow-up. Diagnostic laparoscopy showed free blackish dark colour fluid in the canal of Nuck -‘endometriocoele’, associated with pelvic endometriosis. This case exemplifies that there are possibilities of endometriosis with unusual presentation during diagnostic work-up for groin lump women in the reproductive age. To our knowledge, this is the first case report of endometrial blood in the canal of Nuck from pelvic endometriosis presenting with groin lump.

## INTRODUCTION

Endometriosis is defined as the presence of endometrial tissue outside the endometrial cavity and uterine musculature. It affects 8 to 15 percent of women in the reproductive age group (1). The commonest site for endometriosis usually falls within the pelvis. Extra-pelvis endometriosis can be seen in surgical scars, intestine, bladder, diaphragm, umbilicus and groin (2, 3, 4, 5, 6, 7, 8). Inguinal endometriosis usually presents with groin lump with or without pain. The majority of the cases of groin endometriosis have a previous incision over the groin or abdomen. Cervini et al. reported endometriosis in the canal of Nuck presented with groin lump (9). The canal of Nuck is a portion of peritoneum within the inguinal canal where collection of fluid causes hydrocele. It can be seen as typical comma-shaped appearance on ultrasonography (10). Our case presented with reducible painful swelling at the right groin and was not well appreciated on next visit, mimicking a groin hernia. Diagnostic laparoscopy showed free back flow of blackish dark colour fluid, collected in the canal of Nuck: ‘endometriocoele’. There was no trace of endometrial seeding inside the sac. To our knowledge, this is the first case report of right groin lump containing endometrial blood in the canal of Nuck with associated pelvic endometriosis.

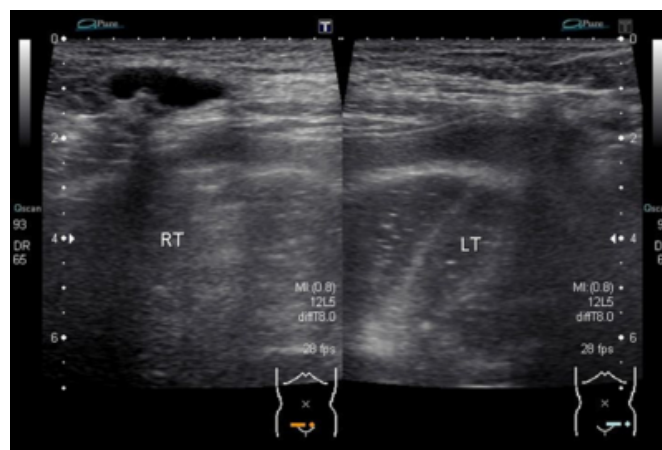
## CASE REPORT

A 28-year-old healthy lady, presented with a right groin

lump of two months’ duration. She noticed a lump which appeared more prominent especially at the later part of her menstrual period. The patient experienced slight pain over the groin. Initial examination affirmed a reducible, slightly tender small lump without signs of inflammation or obstruction. She had a history of severe dysmenorrhoea since menarche and regular follow-up with a gynaecologist for a diagnosis of possible endometriosis for the last three years. Abdominal ultrasonography reported a cystic swelling at the right suprapubic area measuring 3x2x1 centimetres (figure 1).

## Figure 1

Figure 1. Ultrasonographic finding of a cystic lesion in the right suprapubic area.



No bowel loop or obvious communication with the peritoneal cavity was noted on ultrasonography. However, the lump was not obviously seen at the next visit one week after ultrasonography. Diagnostic laparoscopy showed pelvic endometriosis with free darkish black colour fluid in the pelvic cavity. There was a small peritoneal recess on each side at the area of the deep ring. The right recess had a length of around 3cm, where fluid of the same colour was collected. Pressure on the suprapubic area allowed back-flow of the inside collection to the peritoneal cavity. The peritoneal pouch was inverted back into the peritoneal cavity during laparoscopy and closer examination appeared normal with no signs of endometrial seeding or inflammation. Both defects were closed after inversion of the sac (laparoscopic herniotomy). Laparoscopic adhesiolysis was performed for the right ovary and tube from pelvic endometriosis with the help of gynaecological colleagues. The patient was well post-operatively and discharged on the next day. At second and sixth week follow-up her groin lump and pain was solved.

### **DISCUSSION**

Endometriosis is classically defined as implantation of endometrial glands and stroma outside the endometrial cavity and uterine musculature resulting in bleeding, fibrosis and cyclical pain. It is a disease almost exclusively in women of reproductive age. Groin endometriosis is a rare variant of extra-pelvic endometriosis and the first case was reported in 1896 by Allen and by now there are approximately 40 cases reported in the available English literature (1). The mean age at the time of diagnosis is 31 years (8) and it ranges from 22 to 46 years in patients with external endometriosis (11). Inguinal endometriosis frequently presents with painful groin lump (12). Pain was more exaggerated during menstruation (1). There had been some cases of groin endometriosis presented with painless groin lump (8). In our case, initial presentation of the groin lump was with slight discomfort. It was reducible and small, and appeared cystic. Contrary to other inguinal endometriosis, the lump was not well felt at the next visit; this can be explained by blood from the pelvic endometriosis collected in the canal of Nuck, and we like to call this an ‘endometriocoele’. The canal of Nuck is an embryologic remnant of the peritoneum, like the processus vaginalis in the male that can remain patent resulting in either a hydrocele or an indirect inguinal hernia, depending on neck and size of the sac (10). This area is one of the places in the groin having endometrial seeding (13).

The majority of inguinal endometriosis occurs on the right side and the right side was also affected in our report. Fluid current in the peritoneal cavity and relative protection of the left side by the sigmoid colon can explain the right-side dominance. Another theory supports right-sided pathology due to the presence of atypical lymphatics from the intraperitoneal cavity and pelvis to the right groin (8). Most of the patients with inguinal endometriosis had concomitant intraperitoneal or pelvic endometriosis where the round ligament acts as a route for endometriosis to affect the inguinal canal and groin. However, some reports mentioned that inguinal endometriosis may appear without pre-existing intraperitoneal endometriosis (1, 14, 15).

Only less than 50 percent of inguinal endometriosis are correctly detected during clinical examination (16). A history of catamenial pain and tenderness associated with an inguinal mass is important in distinguishing this condition from other inguinal pathology (17). However, in our patient, pain and lump appeared around the end of menstruation showing that the blood from pelvic endometriosis had time to collect which correlated with her presentation. A possible explanation for this situation is that the patient has a small peritoneal recess forming a canal of Nuck and allowing fluid to collect in it.

Ultrasonography, computed tomography and magnetic resonance imaging (MRI) are main diagnostic modalities for endometriosis. Ultrasonographically, classical endometriosis appears as hypoechoic homogenous lesions with diffuse low-level echos suggesting non-specific inflammatory pathology. Magnetic resonance imaging (MRI) can detect groin endometriosis more accurately than ultrasonography and CT (18, 19). Perez-Seoane et al suggested fine-needle aspiration cytology (FNAC) for the diagnosis of inguinal endometriosis which can be performed as outpatient procedure (20). However, there is a possibility of injury to the contents especially in case of incarcerated hernia without prior imaging confirmation. Diagnostic laparoscopy is recommended in patients who have a history of pelvic endometriosis, especially in those with history of subfertility (8, 17). In our case, diagnostic laparoscopy was performed and it was noted that the patient had endometriosis on both side of the pelvis, mainly on the right side, involving right ovary, broad ligament and part of the sigmoid colon.

The treatment advocated for groin endometriosis is wide excision of the lesion in toto without spillage, if possible, to decrease recurrence (8, 21). However, in our case, there was only a collection of blood inside the canal of the Nuck

recess, forming an ‘endometriocoele’ and no evidence of endometriosis seeding inside the canal noted during laparoscopy. The treatment for our patient included inversion of the peritoneal recess back to the peritoneal cavity and closure of the deep ring laparoscopically.

Patients who have concurrent intraperitoneal or pelvic endometriosis, like in our case, need to have some further evaluation and medical and/or hormonal treatment by a gynaecologist. Those treatments include oral contraceptive pills, gonadotropin releasing hormone analogues and danazol, given individually or in combination (8, 22).

## CONCLUSION

We present the first case report of an ‘endometriocoele’ in the canal of Nuck. Inguinal endometriosis is a rare clinical condition accounting for one percent of external endometriosis (12). Most of the cases present with groin lump with or without pain. The canal of Nuck, a peritoneal recess, is place for fluid collection causing hydrocele in female patient (10). In our report, the patient was having a collection of endometrial blood in the peritoneal recess of Nuck’s canal (‘endometriocoele’) from concomitant pelvic endometriosis. Therefore, two visits led to different clinical findings making it challenging to get the correct diagnosis preoperatively. Endometriosis itself is exclusively a gynaecological problem; however, it does present to general surgeons with atypical presentations. We have to consider unusual presentations of this common disease in reproductive age as differential diagnosis not only on clinical examination, but also with unusual imaging findings.

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