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Benign Ovarian Tumor: A Diagnostic Dilemma Necessitating Excessive Surgery in a Resource Poor Setting

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Abstract Mucinous cystadenomas are benign ovarian tumours which are characteristically slow growing with the propensity to grow up to 70 kilograms in size. It constitutes 10-20% of all epithelial ovarian neoplasms. We present the case of a patient who presenting with features that suggested a malignant ovarian tumour but was later found on histology to be a mucinous cystadenoma. She is a 50 year old Para 7+0 woman with 5 living children, 12 years post-menopausal who presented with abdominal swelling of nine months duration, uterovaginal prolapse of 8 months duration and rectal prolapse of 1 month duration, associated with excessive weight loss, pleural effusion and massive ascites. Ultrasound features suggested a malignant ovarian tumour. She subsequently had exploratory laparotomy with total abdominal hysterectomy, bilateral salpingo-oophorectomy, infracolic omentectomy and appendectomy due to the suspicion of malignancy as we did not have facility for frozen section during the procedure. Histology result subsequently showed she had a mucinous cystadenoma. She did well postoperatively and was followed up subsequently and remained healthy.

Keywords: *Benign Ovarian Tumour, Hysterectomy, Salpingectomy, resource poor setting*

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1. Introduction

Ovarian masses are common both in the pre-menopause and post-menopause but majority are benign and there is 5-10% life time risk of surgery [1]. Mucinous cystadenomas are benign ovarian tumours constituting 10-20% of all epithelial ovarian neoplasms. They are slow growing with growth reaching up to 30cm [2]. They are usually the largest tumours in the human body and can weigh up to 70 kilograms. Benign mucinous tumours on the average are 16-20 centimetres in size [2]. Seventy five to eighty five percent of mucinous tumours are benign and 79% whether benign or malignant are unilateral. They have the propensity to progress from benign to borderline and then malignant [3]. It is often difficult to determine whether or not an ovarian tumour is benign or malignant prior to surgery especially when cystic and solid components are present. Unnecessary extensive but avoidable surgical interventions, like hysterectomy with bilateral salpingo-oophorectomy, are often offered patient with a benign tumour who had inaccurate pre-operative diagnosis [4].

Various benign ovarian tumours with solid and cystic components mimic malignancy as there is overlap of features which makes even the imaging findings of some imaging technique difficult to make the diagnosis [4]. Some of the benign pelvic lesions still present diagnostic dilemma including peritoneal tuberculosis which is difficult to differentiate from advanced cancer of the ovary hence requires biopsy for diagnosis [5]. Imaging advances with combination of morphologic and functional parameters has further improved the diagnostic performance of magnetic resonance imaging [6]. Majority of undetermined adnexal masses on ultrasound and CT scans can now be correctly diagnosed with magnetic resonance imaging [7,8]. Some reports have shown thin wall, smooth inner wall, anechogenicity or low echogenicity as important features of benign tumours as opposed to complex mass without demonstrable wall, indistinct inner wall and highly echogenic lesion with solid components associated with malignant tumours [9].

2. Case Report

A 50 year old $P7^{+0}$ woman with five living children, 12 years postmenopausal who presented with abdominal swelling of nine months duration, utero-vaginal prolapse of 8 months duration and rectal prolapse of one month

duration. The abdominal swelling was insidious in onset and progressively increased in size. The utero-vaginal prolapse was non-reducible and the rectal prolapse was associated with tenesmus. There was also associated excessive weight loss and breathlessness.

On examination, she was a cachectic, middle aged woman with egg-on –stick appearance, in respiratory distress pale with bilateral leg edema (Figure 1). Her pulse rate was 96 beats per minute, blood pressure 130/80 mmHg. There was evidence of pleural effusion on the lower left lung zone. The abdomen was markedly distended with visible superficial veins. Ascites was demonstrated by fluid thrill. There were both non reducible utero-vaginal prolapse and rectal prolapse.

Abdominopelvic ultrasound scan showed a heterogenous complex mass having multiple thick septations with predominant solid components, arising from the left adnexium and extending to occupy the entire intra-abdominal cavity. It measured 17x14x17cm with irregular walls. The mass displaced the intra-abdominal organs. The liver and spleen were normal. There was significant echorich loculated fluid collection in the left paracolic gutter. Both ovaries and the uterus were not demonstrable. Packed cell volume was 25%, ESR-45 mm/1st hour, white blood cell count was 5.8 X 10^9/L. Liver function test, serum electrolyte urea and creatinine test were within normal limits. Serological tests (HIV, HBSAg, HCV tests) were all negative. Sputum acid fast bacilli test X 3 was negative. Electrocardiograpy was normal. Chest X-ray showed blunting of the costo-phrenic angle with no mediastinal shift.

A diagnosis of left ovarian cancer was made and the patient was prepared for exploratory laparatomy for staging and optimal debulking.

Figure 1. The egg-on-stick appearance of the patient, with abdominal distension

Figure 2. The ovarian cyst after delivery during surgery

Figure 3. The removed uterus during the procedure

She had an exploratory laparotomy with total abdominal hysterectomy, bilateral salpingo-oophorectomy, infracolic omentectomy and appendectomy. Findings were ascitic fluid of 1.5 litres, multiloculated left ovarian mass containing mucinous materials (Figure 2), healthy looking liver, spleen, bladder, right fallopian tube and ovary. An enlarged and inflamed appendix was also noted. The uterus looked atrophic with elongated cervix (Figure 3).

3. Histology

Ascitic fluid cytology showed no atypical cells. Omental specimen histology showed- macroscopically, one piece of dark brown specimen, measuring 30 x 14cm in the widest diameter. Microscopy showed dense infiltrate of inflammatory cells, no atypical cells, consistent with an omental inflammatory reaction. The left ovarian specimen showed areas of haemorrhage and chronic inflammatory cells, consistent with mucinous cystadenoma. Histology of the appendix showed an appendiceal mucocele.

4. Discussion

The peak incidence of mucinous cystadenoma occurs at 30-50 years of age. Our patient was 50 years of age. An algorithm of laterality of the tumour and size has been used by researchers to predict whether a mucinous tumour is benign or malignant. Unilateral mucinous cysts with size 16-20cm are usually benign while mucinous cysts that are bilateral and with size lower than 16cm are often malignant [10]. Our patient had a unilateral cyst that measured 30 x 30 x 15 cm.

Mucinous tumours present in varying fashions. It could be asymptomatic in which case it is an incidental finding or present as an abdominal swelling/ distension with obstructive urinary symptoms, especially for benign mucinous tumours. Our patient presented with markedly distended abdomen.The distinguishing mark for the malignant mucinous tumour is weight loss and vague gastrointestinal symptoms anemia and ascites. Our patient presented with these features which suggested she had a malignant tumour. Ascites which may be exudative or transudative is a common feature of malignant ovarian tumours and occurs in 79% of cases where as it is present only in 9% of patients with benign ovarian tumours [10]. It is caused by increased capillary permeability [3]. Ascites has a 95% positive predictive value and 73% negative predicting value for a malignant and benign ovarian tumour respectively.

Pleural effusion also suggests a malignant ovarian tumour as it is present commonly in patients having a malignant tumour. The exact mechanism for pleural effusion is not known but it is believed to occur from the transfer of ascitic fluid from the trans-diagphragmatic lymph channels. The size of the effusion is not dependent on the size of the ascites [11]. Weight loss was observed in our patient and was excessive. Weight loss is a common feature in patients with malignant ovarian tumour and is often the first noticeable sign but is not a common sign of benign ovarian tumours [12]. It is present in up to 40% of cases and 80% in advanced cases of malignancy. Weight loss observed in our patient who had a benign ovarian tumour may have been due to easy satiety, poor appetite and poor intake from the abdominal distension occasioned by the mass. Cachexia is not a common feature in patient with a benign ovarian tumour. Our patient also had uterovaginal and rectal prolapse wich are not common features of ovarian tumour. Uterovaginal and rectal prolapse may have been due to the increased intra-abdominal pressure exacted by the mass and ascites as well as her postmenopausal state.

According to the IOTA group, features on ultrasound that suggest a malignant ovarian tumour include irregular and solid mass, presence of ascites, at least four papillary structures, irregular multilocular solid tumour with largest diameter $\geq$ 100 millimetres and a strong blood flow on Doppler [13]. Our patient had these ultrasonographic features. These ultrasound features and the findings from history, physical examination and other investigations painted a confusing picture of her presentation, suggesting a malignant ovarian tumour. Magnetic resonance imaging with morphologic and functional parameters is a better diagnostic tool [6,7], however this was not offered to our patient because it is not available in our centre.

She eventually had an exploratory laparotomy with total abdominal hysterectomy, bilateral salpingo-oophorectomy, infracolic omentectomy and appendectomy done for her. Appendectomy was done due to presence of mucinous substance as part of standard care. This extensive surgery may not have been necessary with accurate pre-operative diagnosis. Frozen section during the procedure would have also helped in the diagnosis but was not done as the facility was not available then. She however had an unremarkable post-operative period and gained weight following the procedure. She is currently alive and healthy.

5. Conclusion

Benign ovarian tumours can present with confusing features that mimic ovarian malignancy, accurate pre-operative diagnosis with appropriate facilities are necessary to avoid unnecessary extensive surgeries in the patients.

Conflicts of Interest

None declared by the authors.

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