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MULTICENTRIC STUDY OF FREQUENCY OF UTERINE SARCOMAS IN PATIENTS OPERATED FOR UTERINE FIBROIDS BY A SINGLE SURGEON OVER 14 YEARS SURGERY

Gynaecology

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ABSTRACT

OBJECTIVE- To estimate the frequency of unsuspected uterine sarcoma identified post operatively in woman undergoing surgery for presumed benign uterine fibroids done at multiple centres by a single surgeon over a period of 14 years from 2003 to November 2017.

MATERIAL AND METHODS-This was a retrospective multicentric study. The records of all the 444 patients with presumed benign uterine fibroids were reviewed. Descriptive statistics were used to analyse demographic and clinical characteristics. To calculate confidence intervals (CIs), Clopper Pearson Exact method was applied.

RESULTS- Pre-operatively 444 patients had presumed benign fibroids in uterus. Among 444 patients 191 patients (43.01%) underwent hysterectomy and 253 patients (56.98%) had myomectomies. On histopathology, leiomyosarcoma was revealed in only one patients (1 in 444, 0.225%) with 95% Confidence Interval: 0.00005702-0.01248 who had undergone laparoscopic assisted vaginal hysterectomy with bilateral salphingo-opherectomy.

CONCLUSION- In our study, the frequency of unsuspected uterine sarcoma was 1 in 444 (0.225%) among woman who underwent myomectomies or hysterectomies to treat presumed benign uterine fibroids.

KEYWORDS

Uterine fibroid, unsuspected uterine sarcomas, myomectomy, hysterectomy

INTRODUCTION

Uterine fibroids are one of the most common types of pelvic tumour in women of reproductive age group (1,2). Surgical treatment options available for the management of uterine fibroids include hysterectomies or myomectomies. The surgical route is shifting from from an abdominal to a laparoscopic approach, which confers a more rapid recovery and fewer peri-operative complications. The prevalence of unsuspected uterine sarcomas in patients undergoing uterine fibroid surgery i.e hysterectomies or myomectomies is of concern and the issue is particularly important when laparoscopic power morcellation is used (3). Unintentional morcellation of uterine sarcoma can occur if a patient is misdiagnosed as having benign uterine fibroid. Uterine sarcomas on the other hand are rare and malignant tumour that accounts for only 1% -3% of the uterine malignancies. The preoperative diagnosis of uterine sarcomas is difficult and there is no pathognomonic sign for differential diagnosis. Abnormal uterine bleeding is the most common symptom but benign myomas also have same clinical features. A rapidly growing uterine mass is highly indicative of malignancy but various studies have shown that the rapid growth of a fibroid defined by Parker as an increase of 6 weeks gestational size over a one year period does not always prove to be malignant(4,5). The lack of specific symptoms, signs, or diagnostic technique for pre-operative differentiation of benign uterine fibroid and uterine sarcomas, results in most patients being diagnosed after surgery. If a uterine sarcoma is mistakenly diagnosed as a uterine fibroid and is morcellated via laparoscopy, serious concerns may arise (6,7).

Minimal invasive surgery is offered to many patients with uterine fibroids because of its advantages over open surgery, which include less postoperative pain, shorter hospital stay and less chances of postoperative wound infection (8). The concern of potential presence of sarcoma may decrease the frequency of laparoscopic surgeries in patients with uterine fibroids. Thus this study is aimed to evaluate the frequency of post-operative histological diagnosis of uterine sarcoma following myomectomies or hysterectomies for presumed benign fibroids.

MATERIAL AND METHODS

We collected data retrospectively from the records of patients with uterine fibroids treated between 2003 to 2017. The files of patients who underwent hysterectomies or myomectomies for presumed benign fibroid were reviewed. Demographic and clinical data were collected only for women with unexpected uterine sarcomas. Unexpected sarcoma were defined as cases where uterine sarcoma was confirmed via postoperative histopathological analysis in which it was not suspected preoperatively and there were no clinical preoperative suspicion or indication of malignancy. The following variables were retrieved from the medical records of the women diagnosed with uterine sarcoma on histopathology: patients age, body mass index, clinical symptoms, imaging modality, surgical procedure performed, additional treatment if given and survival status. The staging of uterine sarcoma was performed based on updated FIGO classification system 2009.

Statistical analysis was performed using the Statistical Package for the Social Science (SPSS) version 22. To calculate the 95% confidence interval (CI) for the proportion of patients on the binomial distribution , the Clopper Pearson Exact method was used.

RESULTS

Between 2003 to November 2017, 444 patients were diagnosed pre-operatively as having benign uterine fibroids. Of these 191 patients (43.01%) underwent hysterectomies and 253 patients (56.98%) had myomectomies. Only one patient was post-operatively diagnosed as having leiomyosarcoma on pathological analysis. The patient was 44 year old premenopausal women with BMI of 28, and her presenting complaint was menorrhagia. Medical history of patient was otherwise unremarkable. Ultrasonography of the patient showed a hypoechogenic area measuring 7x6 cm on fundus and posterior uterine wall suggestive of intramural fibroid. Examination of the external genitalia, vagina and cervix was normal. On per vaginum examination , uterus was enlarged 16 week size, firm with no palpable adnexa. The diagnosis of symptomatic intramural fibroid was made. The patient underwent laparoscopic assisted vaginal hysterectomy with bilateral salphingo-opherectomy. The final histopathological diagnosis showed leiomyosarcoma but there was no evidence of spread of malignancy to adnexa . According to the updated FIGO Classification system 2009, it was stage 1B. On 5 year follow up patient was alive without any evidence of recurrence of disease.

DISCUSSION

The uterine sarcomas form a group of malignant tumours that arise from the smooth muscle or connective tissue of the uterus accounting for 1-3% of the uterine malignancies. Histologically, uterine sarcomas were first classified into leiomyosarcomas, accounting for 40% of cases, carcinosarcomas (40%), endometrial stromal sarcomas (10% to 15%), and undifferentiated sarcomas (5% to 10%). Carcinosarcomas comprising of both malignant epithelial and malignant sarcomatous components are no longer classified as a subtype of uterine sarcomas but instead are considered as uterine carcinomas. If the uterine smooth muscle cells i.e myometrium is the originator, the tumour is the uterine leiomyosarcoma. If the growth originates from the stroma that supports endometrium then the tumour is endometrial stromal

sarcoma. Undifferentiated uterine sarcomas, rare type, is similar to endometrial stromal sarcomas but it is more aggressive.

In our study, the frequency of unsuspected uterine leiomyosarcoma in patients who underwent surgery surgery for presumed benign fibroids was 0.225% (1/444). Pritts et al (9) found 0.051% of prevalence of unsuspected leiomyosarcoma among more than 30,000 women. Picerno et al (10) showed no cases of unsuspected uterine leiomyosarcoma among 1004 women who underwent surgery for presumed benign fibroids. Kho et al (11) conducted prospective cohort study and found leiomyosarcoma were identified, corresponding to a 0.049% incidence rate. Similarly a study from US Food and Drug Adminstration analysed 12,402 women who underwent surgery for uterine fibroid,estimated that the prevalence of unexpected uterine leiomyosarcoma was 0.064% (12).

In our present study there was no case of endometrial stromal sarcoma or undifferentiated uterine sarcoma among women who underwent surgery for presumed benign fibroids. Bojahr et al (13) reported four cases of endometrial stromal sarcoma among 10,119 laparoscopic supercervical hysterectomy ; Graebe et al (14) identified 3 cases of endometrial stromal sarcoma among 1361 patients (0.22%); Kho et al (11) reported two cases of unsuspected endometrial stromal sarcoma among 10,119 hysterectomy (0.019%).

Overall, our study found one case of uterine leiomyosarcoma among 444 patients undergoing myomectomy or hysterectomy for benign uterine fibroids during a period of 14 years.After reviewing multiple studies, the prevalence of unsuspected uterine sarcoma among patients undergoing surgery for uterine fibroids appears to be low but there are many aspects that must be given consideration before operating for benign uterine fibroids. To reduce the occurance of unsuspected uterine sarcomas, the clinical profile of the patient and the method used for the preoperative diagnosis of a uterine sarcoma is important. Brohl et al (15) found the risk of unsuspected uterine sarcoma varied significantly across age groups and the risk of sarcoma ranged from from a peak of 10.1 cases per 1000 for patients aged 75-79 years to <1 case per 500 for patients aged <30 years. Abnormal uterine bleeding is the main clinical symptom. A rapidly growing pelvic mass may be indicative of malignant uterine sarcoma. Ultrasonographic features that may point towards the suspicion of sarcoma include increased blood flow and the degenerative changes in mass but the value is very limited in the preoperative diagnosis of uterine sarcoma. MRI has an emergimg role in the evalution of uterine masses(16,17,18). By comparing the localisation, surgical margins, T1 and T2 signals, gadolinium based contrast enhancement and diffusion weighted images, MRI can be very helpful in distinguishing the uterine sarcomas from uterine fibroids. Although it is difficult to distinguish between benign degenerating fibroids and malignant uterine sarcomas even on MRI, a preoperative MRI still should be recommended.

Selecting the method of surgical treatment in patients with large uterine fibroid currently posses a dilemma due to the risk associated with the use of morcellators. On April 17, 2014, the US Food and Drug Adminstration issued a safety communication about the laproscopic uterine power morcellator during hysterectomy and myomectomy (ref 19). Laproscopic power morcellation posses the risk of spreading unsuspected malignant tissue most notably uterine sarcoma beyond the uterus. George et al (20) compared the outcomes between those patients who underwent morcellations or total abdominal hysterectomy as their first surgery for uterine leiomyosarcoma. Intraperitoneal morcellation was associated with a significantly increased risk of abdominal/pelvic reccurences(P0.001) and with a significantly shorter median recurrence free survival (10.8Vs39.6 months).

To decrease the risk associated with morcellation of uterine sarcomas , a preoperative differential diagnosis between uterine fibroids and uterine sarcomas should be done by utilising a combination of clinical findings , image modalities and biochemical factors.

The main limitation of our study is its retrospective design and small sample size.

CONCLUSION

The frequency of unsuspected uterine sarcoma was 1 in 444 [0.225%, 95%CI:(0.00005702-0.01248)] among the women who underwent myomectomies and hysterectomies for the treatment of presumed benign uterine fibroids. Although the frequency is low but it is critical to make a cautious preoperative evaluation in patients undergoing surgeries for benign uterine fibroids. Due to the limitation of our sample size, further research should be carried out to avoid the risk in future.

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