

### **Rare case of Vaginal Leiomyoma – A diagnostic challenge to surgeons and gynecologists**

#### **ABSTRACT**

**Aim :** To present a rare case report of a large vaginal leiomyoma that was resected by combined laparoscopic and perineal approach

**Presentation of case:** A 33 year old lady presented with a perianal swelling . Initial evaluation showed a large mass in rectovaginal space and peri-rectal region on right side. After resection by combined laparoscopic and perineal approach, the final histopathology and immunohistochemistry were suggestive of Vaginal Leiomyoma.

**Discussion:** Most common extra-uterine sites for leiomyoma are broad ligament, ovarian ligament and round ligament and their incidence is <1%. Vaginal involvement is extremely rare and unusual. Its accurate diagnosis is difficult to establish by preoperative imaging. The final diagnosis can be made only from the histopathology and immunohistochemistry of the resected specimen.

**Conclusion:** Posterior vaginal leiomyoma is a rare tumor and high index of suspicion is essential to diagnose pre-operatively. Surgical excision remains the mainstay of the treatment.

**Keywords:** Vaginal Leiomyoma, Posterior Vaginal Leiomyoma, SMA, H Caldesmon, Laparoscopic and Perineal approach

#### **INTRODUCTION**

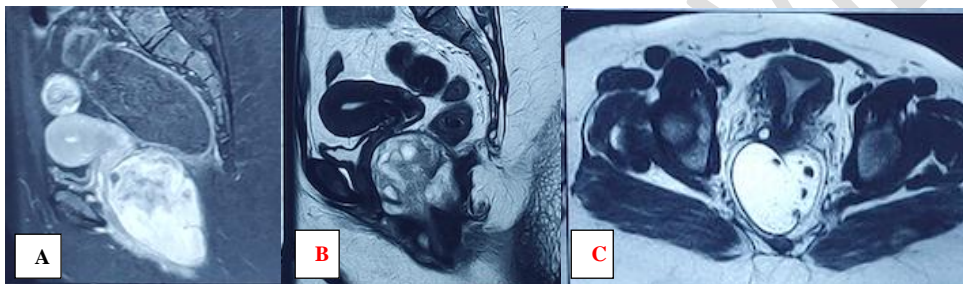
Uterine fibroids are the most common gynecological disorder presenting in reproductive age group, often requiring surgery. Extrauterine fibroids are extremely rare. The origin of these fibroids is smooth muscle cells of genital tract (uterus, cervix, ovaries), but can develop in any unknown location. It is a rare occurrence of primary vaginal leiomyoma and most common location of such rare tumor is anterior vaginal wall [1]. These tumours are thought to arise from Mullerian smooth muscle cells in the sub-epithelium of the vagina [2].

Uncommon presentation / variations in presentation are disseminated peritoneal leiomyomatosis, benign metastasizing leiomyoma and vaginal leiomyoma .These benign tumors mimic malignancy and pose a diagnostic challenge and have an impact on the surgical management [3]. We report a rare case of vaginal leiomyoma that was treated surgically, combining initial laparoscopic surgery and surgical excision through perineal dissection.

## PRESENTATION OF CASE

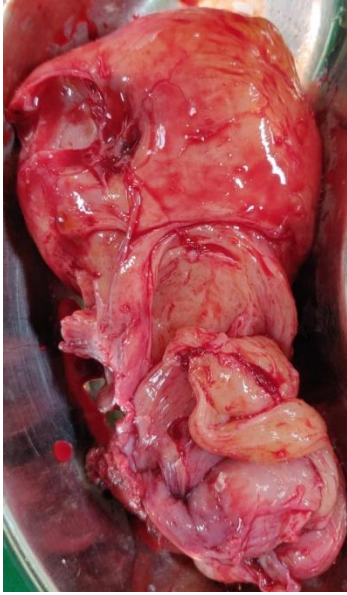
A 33years old lady, mother of two and sterilized, presented to surgical outpatient department with complaints of perianal swelling and discomfort for a duration of 3-4 months. She also complained of increased frequency of defecation and sensation of incomplete evacuation of stools .There was no complaints of pain abdomen or dyspareunia. On local examination, a bulge was noted in the perianal region to the right of perineum. On Vaginal examination, there was fullness in the right and posterior fornix and it was non-tender. Uterine size was normal, anteverted and mobile. On Per rectal examination the mass was extending from just above anal verge, occupying 6-11° clock position.The rectal mucosa was smooth and the upper extent of the mass could not be reached.

Ultrasound showed a large solid appearing lesion, measuring 9 x 5.6 x 7.8cms with multiple cystic foci. MRI pelvis showed a large lobulated T1 hypointense and T2 heterogeneously signal mass lesion in rectovaginal space and peri-rectal region on right side.(Fig A,B,C)



**Fig 1: A, B,C – MRI images of the lesion** showing a large lobulated T1 hypointense and T2 heterogeneously signal mass lesion in rectovaginal space and peri-rectal region on right side

Initial suspicion was an Extra Gastro-Intestinal Stromal Tumor (EGIST). Patient was scheduled for laparoscopic excision of this mass. Per operatively there was a large mass in the right lower para-rectal region (about 11x 9cms).There was no free fluid in the pelvis, no rectal wall or sphincter invasion. Intra-abdominal findings did not reveal any evidence of mass lesions in the pelvis. During laparoscopic surgery, uterus and bilateral adnexa appeared normal. Laparoscopic dissection on the side of the rectum was performed upto the levator ani but no mass was found, hence decision for perineal incision was made, para-rectal space was created, the mass was dissected from the rectal wall, levator ani and the sphincter and was resected en-masse. No adherence with the posterior vaginal wall was noted. The lesion measured about 14x 8x 7cms grossly. Post-operative period was uneventful. Gross appearance of the lesion was rubbery, fleshy and cut surface with gray-white whorled appearance.(Fig 2 ) Histopathological examination revealed spindle cell neoplasm with cystic changes. Immunohistochemistry (IHC) was performed (Table1). IHC was suggestive of leiomyoma with cystic change



**Fig 2 – Gross appearance of the lesion – fleshy with rubbery consistency.**

**Table 1 :** Details of Immunohistochemistry for the diagnosis of the mass

Pan CK	Patchy positivity in tumor cells
Calretinin	Negative
CD 99	Negative
WT1	Negative
Glypican 3	Negative
SMA	Strong & diffuse positive in tumor cells
H Caldesmon	Strong & diffuse positive in tumor cells
Cyclin D1	Negative
B Catenin	Cytoplasmic positivity of tumor cells
C kit	Negative
Ki 67	Around 15% in areas of highest proliferation

Patient was followed up at intervals of 1 week, 6 weeks, 6 months and 1 year. At 18 months follow-up patient has had no signs/symptoms of disease recurrence.

## DISCUSSION

Leiomyomas are smooth muscle tumors, dependent on estrogen stimulation, whether uterine or extra-uterine [4]. Most common extra-uterine sites for leiomyoma are broad ligament, ovarian ligament and round ligament and their incidence is <1%. These often present with vague symptoms, leading to delay in diagnosis. In our case, the location of the mass posterior to the vagina, is extremely rare and unusual.

Leiomyomas of deep somatic soft tissue are spindle shaped tumors and almost all are diffusely and strongly positive for SMA and desmin. These tumor cells are often not positive for KIT, but mast cells within the tumor are strongly KIT positive [5] and are commonly positive for oestrogen receptor and progesterone receptor proteins.

Vaginal leiomyomas are often single and slow growing [6]. They are commonly encountered in anterior vaginal wall, which necessitates the incision over the vagina and dissection of the fibroid from the surrounding structures. In our case, as the mass was located posterior and lateral to the vaginal wall and with no prior anticipation of vaginal leiomyoma, incision was made to the right of perineum, vaginal involvement was not encountered. Mass was resected in toto. Surgical excision remains the mainstay of the treatment in such cases and histopathologic examination with IHC reveals the type of pathology. These lesions are rare and their malignant potential must be determined and hence must be carefully evaluated for cytologic atypia and mitotic activity and necrosis [7].

## CONCLUSION

Posterior vaginal leiomyoma is a rare tumor occurrence and high index of suspicion is essential to diagnose pre-operatively. Diagnostic imaging such as ultrasonography and MRI are useful aids in their diagnosis. Immunohistochemistry to derive at final diagnosis is of utmost importance and for exclusion of malignancy.

## References

- 1) Wethmar, Elize & Mouton, Arnold & Dreyer, Greta. (2017). Vaginal leiomyoma presenting as a lateral vaginal wall mass. *Southern African Journal of Gynaecological Oncology*. 9. 1-3. 10.1080/20742835.2017.1314630.
- 2) Delmore J, Benign Neoplasms of the vagina. *The global library of women's medicine* [online]. 2008 [cited 12 Oct 2016]. doi: 10.3843/ GLOWM.10005. Available from: [https://www.glowm.com/section\\_view/heading/Benign%20Neoplasms%20of%20the%20Vagina/ item/5#8231](https://www.glowm.com/section_view/heading/Benign%20Neoplasms%20of%20the%20Vagina/ item/5#8231)
- 3) Sen N, Demirkan NC, Colakoglu N, Duzcan SE. Are there any differences in the Extrauterine leiomyomata presenting with sepsis requiring hemicolectomy
- 4) Expression of hormonal receptors and proliferation markers between uterine and extrauterine leiomyomas? *International Journal of Surgical Pathology*. 2008;16(1):43-47
- 5) Differential diagnosis of gastrointestinal stromal tumor by histopathology and immunohistochemistry Seichi Hirota
- 6) Wu Y, Wang W, Sheng X, Kong L, Qi J. A Misdiagnosed Vaginal Leiomyoma: Case Report. *Urol Case Rep*. 2015 Mar 18;3(3):82-3. doi: 10.1016/j.eucr.2015.02.004. PMID: 26793510; PMCID: PMC4714314.
- 7) Benign Smooth Muscle Tumors (Leiomyomas) of Deep Somatic Soft Tissue . Aoife J. McCarthy and Runjan Chetty