

Primary Anterior Abdominal Wall Leiomyoma- A Diagnostic Enigma

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Leiomyoma is the commonest benign tumour of the reproductive tract and are found in 20% of women of reproductive age [1]. Extrauterine leiomyomas are uncommon, generally benign and occasionally cause diagnostic dilemmas as they can mimic malignancy. Anterior abdominal wall leiomyomas are a rare finding and there are very few reported cases of primary abdominal wall leiomyoma without previous uterine surgeries or concomitant presence of uterine fibroids [2]. We present an interesting case of primary solitary leiomyoma of the anterior abdominal wall in a patient with no previous history of any uterine surgery.

A 32-year-female patient presented with a lump in right lower abdomen noticed eight months ago which was progressively increasing in size. Initially, it was painless but for the last two months there was dull aching pain in the lump, not related to menstrual cycles. In the past history, she had undergone laparoscopic tubal ligation ten years back. She had three living children through normal vaginal delivery. There was no history of contraceptive use in the past.

General physical and chest examination were normal.

Local examination revealed a lump of size 8 x 6 cm to the right of the umbilicus below the rectus sheath. It was non tender, oval shaped, firm in consistency, smooth with well defined margins and mobile in all directions.

Her haematological and routine biochemistry investigations were within normal limits. Contrast enhanced computed tomography (CECT) scan of the whole abdomen showed a well-defined mass measuring 8.8 x 8.2 x 5.2 cm in the right lower abdomen showing heterogenous enhancement on contrast. It was closely abutting the anterior abdominal wall muscles with loss of intervening fat planes suggesting probable origin from the rectus muscle sheath [Table/Fig-1]. Fine needle aspiration cytology (FNAC) of the lump suggested spindle cell tumour with unknown malignant potential.

The patient was taken up for exploratory laparotomy via right lower paramedian incision. A 8 x 8 x 6 cm size firm, well-circumscribed, pedunculated mass was found between the rectus muscle and the posterior rectus sheath [Table/Fig-2] with its pedicle attached to

the posterior rectus sheath near the arcuate line. The mass was completely excised [Table/Fig-3]. Other intra abdominal organs along with the uterus and adnexa were normal on exploration. Cut section of the specimen demonstrated grayish-white, firm showing whorled trabeculated pattern [Table/Fig-4].

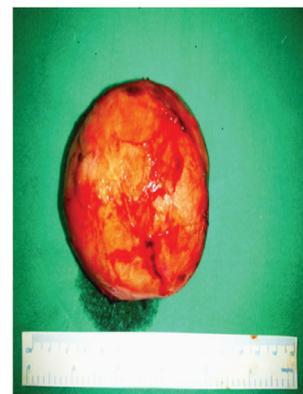
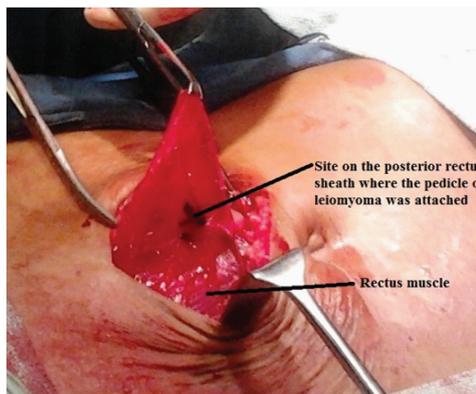
Histopathology report showed spindle-shaped smooth muscle cells in interlacing bundles and whorls. No areas of necrosis or atypia were seen. These features were suggestive of leiomyoma [Table/Fig-5]. Patient's post operative period was uneventful. She was doing well at three months follow up.

The commonest primary diseases of the rectus muscle sheath, which are encountered in the clinical setting, are desmoid tumour and rectus sheath hematoma. Other disorder of the rectus muscle sheath can be abscesses from diverticulitis, perforated sigmoid carcinoma, gallbladder empyema, and disseminated actinomycosis [3] and rarely leiomyoma. Abdominal wall leiomyoma can be primary or parasitic.

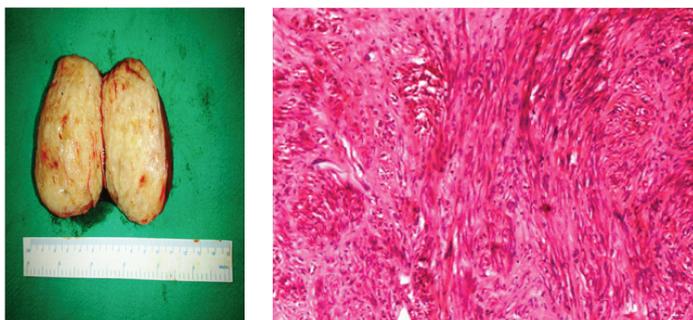
Parasitic leiomyomas have been reported in the retro- or pre-peritoneum. It has been proposed that the uterine leiomyoma becomes adherent to these structures, develops its own blood supply from the surrounding structures and gradually over the time it loses its attachment with the uterus, thus developing as a parasite at the new location [4]. This entity occurs more commonly after laparoscopic uterine surgery than laparotomy [5].

Abdominal wall leiomyomas are a rare finding and are thought to follow seeding of tumour cells following surgical resection of uterine fibroid [2,5]. However, the exact cause of the origin of primary leiomyoma from the anterior abdominal wall is not clear. It has been postulated that the transformation of the cells of the vessel wall in the anterior abdominal layer to leiomyoma occurs probably due to somatic mutations and interplay of hormonal and growth factors [6].

Somatic soft tissue leiomyomas commonly present late in their course as large localized masses. Macroscopically, they present as well circumscribed mass and usually surrounded by a fibrous pseudo-capsule. Histologically, they lack atypia, necrosis and are mitotically inactive (<1 mitoses / 50 high power fields) [7].



[Table/Fig-1]: Contrast enhanced computed tomography (CECT) of the abdomen showing a well circumscribed mass lesion (marked as A) arising from the anterior abdominal wall **[Table/Fig-2]:** Intraoperative photograph after tumour removal showing the site on the posterior rectus sheath from where the tumour arose **[Table/Fig-3]:** Gross pathological photograph of the resected tumour showing a well circumscribed mass lesion



[Table/Fig-4]: Cut section of the excised mass lesion showing smooth and firm greyish white whorl trabeculated pattern **[Table/Fig-5]:** Hematoxylin & Eosin stained section (400X) showing spindle shaped smooth muscle cells in interlacing fascicles. Cells have indistinct borders, fibrillary cytoplasm, elongated nuclei, fine chromatin with inconspicuous nucleoli

The diagnosis of primary leiomyoma of the anterior abdominal wall can be made only when there is no antecedent history of abdominal surgery, open or laparoscopic ever [6]. The tumour should be carefully removed en bloc minimizing spillage of tumour cells to prevent recurrences. Synthetic mesh can be used to cover large defects after tumour extrication [6].

This case is remarkable as there is no history of any menstrual irregularities, contraceptive usage in the past or any previous uterine surgery. She underwent tubal ligation surgery ten years ago but whether seeding of leiomyoma occurred because of that on the anterior abdominal wall is highly debatable. We are yet to come

across any literature suggesting seeding of smooth muscle cell from the fallopian tubes on the anterior abdominal wall.

CONCLUSION

To conclude, benign primary leiomyoma of the abdominal wall can occur and this novel entity should be considered in the diagnosis of the anterior abdominal wall tumours of long duration in any patient without any concomitant tumours elsewhere in the abdomen or any antecedent history of abdominal or pelvic surgery.

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