

A Rare Case of Huge Central Cervical Fibroid with Characteristic “Lantern on Top of St. Paul’s Cathedral” Appearance

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ABSTRACT

Cervical myomas arise from the smooth muscle cells of the cervix accounting for 2% of all uterine leiomyomas. They may disturb the pelvic anatomy and the ureter producing different type of pressure symptoms. Management of symptomatic huge cervical fibroid is myomectomy or hysterectomy and needs an expert hand. Here we report a case of huge central cervical fibroid of size 30 × 20 × 15 cm and weighing 5.5 kg with typical “Lantern on top of St. Paul’s cathedral” appearance on naked eye examination.

Keywords: Leiomyoma, cervical fibroid, myomectomy, hysterectomy

Fibroids are not only the commonest benign tumor of the uterus but are the commonest benign solid tumor in females.¹ They are responsible for about one-third of the hospital admission in the gynecological department.² Their incidence among women is generally cited as 20-25%, but has been shown to be as high as 70-80% in studies using histologic or sonographic examination.³ Most of the leiomyomas are situated in the body of the uterus, but in 1-2% of the cases, they are confined to cervix.⁴ Histologically fibroids are composed of smooth muscle and fibrous connective tissue, so named as uterine leiomyoma, myoma or fibromyoma. The paucity of smooth muscles in the cervical stroma makes leiomyomas in the cervix uncommon. Presence of isolated fibromyoma in cervix with intact uterus is infrequent. Cervical fibroids with excessive growth are uncommon. A central cervical fibroid is usually either interstitial or subserous in origin and arises from supravaginal portion of the cervix, so that it expands the

cervix equally in all directions. On laparotomy, it can be recognized at once, as it fills pelvis, with uterus on top of tumor like “Lantern on top of St. Paul’s cathedral” and poses practical problems during surgery.⁵ This characteristic appearance doesn’t occur when there are 2 or more fibroids in the body of the uterus. Rarely, a submucous fibroid arising from the fundus of the uterus may burrow downwards to lie in the position of the cervix and simulates to form a pseudocervical fibroid. Cervical fibroid can change the shape of the cervix or may lengthen it. If cervical fibroid grows rapidly, it may push the uterus upwards or obstruct the cervical canal. Without proper anatomical knowledge, large cervical fibroids are difficult to handle and need an expert hand to operate these cases.⁶ We report a case of huge central cervical fibroid because of its rarity and being prone for complications during its removal.

CASE REPORT

A 28-year-old woman; para 2, living issue 2, tubectomized, reported at Bankura Sammilani Medical College and Hospital, Bankura, West Bengal, with mass in the lower abdomen, noticed since 3 months, associated with dyspepsia. There was no history of menstrual irregularities, loss of appetite, weight loss and pressure symptoms. Her bladder and bowel habits were normal. She had previous two spontaneous vaginal births with her last child birth was 8 years back.

The examination was carried on with the prior consent from the patient. General examination revealed no

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abnormality except moderate pallor. On abdominal examination, a huge mass like full-term pregnant uterus with restricted mobility was palpated. The mass was nontender, firm to hard in consistency with well-defined margins except the lower pole, which was not palpable suggesting the mass to be of pelvic origin. There was no ascites clinically. A small firm mass with size and shape like normal uterus was palpated through anterior abdominal wall in subumbilical region with restricted mobility continuous with abdominopelvic mass. On speculum examination, cervix was pushed high up and visualized with great difficulty. On per vaginal examination, a huge firm to hard mass was made out, cervix was felt with great difficulty, anterior lip of cervix was felt as a rim and uterus could not be felt separately. Fullness was noted in all vaginal fornices.

On preoperative investigations her hemoglobin was 5.9 g/dL. Peripheral blood film showed normocytic normochromic anemia. Three units whole blood were transfused preoperatively. The corrected hemoglobin level was 10.1 g/dL. Renal and liver function tests were normal. Her CA-125 was 17.3 U/mL.

USG showed a huge heterogeneous space-occupying lesion (SOL) arising from pelvis almost filling the entire abdomen, size was too large to be determined, organ of origin could not be determined. Bilateral ovaries could not be visualized. Gross hydronephrotic changes were seen in left kidney, which right kidney was normal.

Multiple detector computed tomography (MDCT) scan of whole abdomen (oral and IV contrast) showed a huge well-defined heterogeneous enhancing SOL measuring 23.74 × 12.58 cm at pelvis predominantly on left side extending to the upper abdomen displacing the uterus right anterolaterally and urinary bladder to the right side. Left ureter was compressed by the pelvic mass leading to proximal dilatation (Fig. 1).

Fine needle aspiration cytology (FNAC) from abdominopelvic SOL showed occasional small clusters of degenerated epithelial cells in a hemorrhagic background. No definite opinion was possible.

Exploratory laparotomy and proceed was planned. Laparotomy revealed a large central cervical fibroid of 30 × 20 × 15 cm, while the uterus was normal in size and shape placed above the mass with both-sided normal ovaries with typical appearance of "Lantern on top of St. Paul's cathedral" (Fig. 2 and 6). The mass was filling the whole pelvis extending up to the xiphisternum displacing the uterus right anterolaterally and urinary bladder to the right side. After clamping and dividing the round ligaments and the ovarian vessels (Fig. 3),

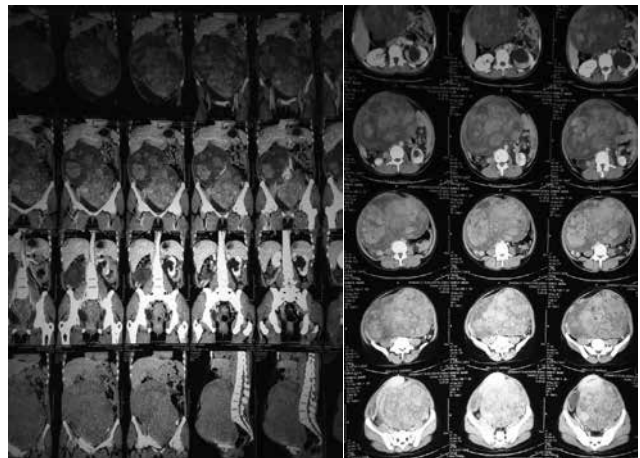


Figure 1. MDCT scan of whole abdomen showing a huge well-defined heterogeneous enhancing SOL at pelvis predominantly on left side extending to the upper abdomen.



Figure 2. Normal uterus and ovaries sitting on top of the central cervical fibroid "Lantern on top of St. Paul's cathedral".



Figure 3. Clamping and dividing the round ligaments and the ovarian vessels.

separation of the anterior peritoneum and bladder was done. The peritoneum, together with the bladder, was pushed downwards with a swab as far as possible off the face of the expanded supravaginal cervix. First intracapsular myomectomy was done (Fig. 4). After cutting the false capsule the impacted cervical fibroid was mobilized upwards and removed *in toto* and sent for histopathological examination. Total abdominal hysterectomy with right-sided salpingo-oophorectomy with left-sided salpingectomy was performed and specimen was sent for histopathological examination (Fig. 5). Left-sided ovary was retained. Left-sided



Figure 4. Intracapsular enucleation of cervical fibroid.



Figure 5. Total abdominal hysterectomy and right-sided salpingo-oophorectomy specimen showing huge central cervical fibroid with normal uterus on top.



Figure 6. Gross appearance of cervical leiomyoma after resection.

internal iliac artery ligation done to secure hemostasis of the fibroid base. Bilaterally ureters were traced till bladder and found intact. Abdomen was closed in layers after placing intra-abdominal drain and taking count of the instruments and the mops. The mass with uterus weighed 5.5 kg. Cut section revealed a firm mass with whorled appearance and pseudocapsule.

Postoperative period was uneventful. Two units of whole blood and 2 units fresh frozen plasma (FFP) were transfused. Abdominal drain was removed after 48 hours. Patient was discharged in satisfactory condition after stitch removal.

Histopathological examination showed leiomyoma with hyaline degeneration. No evidence of malignancy was seen.

DISCUSSION

Fibroid is the commonest benign solid tumor of uterus arising from the neoplastic single smooth muscle cell of myometrium. Cervical fibroids can arise from supravaginal or vaginal portion of cervix. Supravaginal cervical fibroids may be interstitial or subperitoneal and rarely polypoidal. Depending upon the position they may be anterior, posterior, lateral and central. Interstitial growths may displace the cervix or expand it so much that the external os is difficult to recognize. They may disturb the pelvic anatomy and the ureter. Vaginal cervical fibroid is usually pedunculated and rarely sessile.⁴ Anterior fibroid bulges forward and undermines the bladder while posterior fibroid flattens the pouch of Douglas backwards, compressing rectum against sacrum. Lateral cervical fibroid, starting on the side of the cervix burrows out into the broad

ligament and expands it. Their relation to the ureter is important. Wherever the ureter and uterine artery may be in relation to the fibroid, they will always be extracapsular, lateral and posterior.⁵ The knowledge of this fact can turn potentially dangerous procedure into a relatively safe operation.

The symptoms of cervical fibroid depend upon the type of cervical fibroid. Anterior cervical fibroid produces symptoms like frequency or even retention of urine. Retention is more due to pressure than the elongation of the urethra. Rectal symptoms are more common with posterior cervical fibroid in the form of constipation. Lateral cervical fibroid causes vascular obstruction which may lead to hemorrhoids and edema of legs (rare) and symptoms due to obstructive uropathy. Pelvic pain and foul smelling vaginal discharge can be associated with the above mentioned symptoms. A cervical fibroid can lead to abdominal mass, menstrual abnormalities, dyspareunia and sometimes post-coital bleeding, incarcerated procidentia, sensation of something coming down and in case of pregnancy, it can cause obstructed labor.

For symptomatic women, consideration of medical therapy, noninvasive procedures or surgery depends on an accurate assessment of the size, number and position of fibroids. Magnetic resonance imaging (MRI) allows evaluation of the number, size and position of submucous, intramural and subserosal fibroids and can evaluate their proximity to the bladder, rectum and endometrial cavity. Sonography is the most readily available and least costly imaging technique to differentiate fibroids from other pelvic pathology.^{7,8}

A central cervical fibroid forms a special case as it is not usually suitable for treatment by standard hysterectomy techniques,⁵ hence prone for complications like hemorrhage and urological injuries. Altered anatomical relations of the surrounding structures is important. The problems encountered during hysterectomy for cervical fibroids are: 1) the uterine vessels-distortion of normal anatomy- this is because the uterine vessels are so elevated as to run parallel to the ovarian vessels forming a vascular leash close to the ureters; 2) the bladder is pulled up; 3) ureter distortion- the tumor may be impacted in the pelvis displacing the ureters and over hangs the vaginal vault so much that this cannot be reached until the myoma is dislocated upwards or removed by myomectomy. Therefore, more chances of injury to the ureters, bladder and uterine vessels.⁹

The principal to be followed is enucleation followed by hysterectomy to minimize injury to ureter or one can

also give preoperative gonadotropin-releasing hormone (GnRH) analogs 3 months prior to facilitate surgery by reducing the size and vascularity of fibroids, improving the hemoglobin status.⁸⁻¹¹ The disadvantage of GnRH analog is that they can destroy the fine plane of cleavage between the capsule of the tumor and the surrounding structures, thus eliminating one of the very few "god-sends" that are available when attempting to deal with fibroids surgically.⁵

Intracapsular enucleation of fibroid is the best approach to prevent injury to bladder and ureters.¹² For enucleation, the capsular incision may be transverse or vertical one. The advantage of the transverse incision is that it can be placed above the bladder reflection and so reducing the risk of bladder damage. The disadvantage is that it cuts through blood vessels, which results in severe hemorrhage. The vertical incision can be placed over avascular area, usually midline and extended into the body of uterus if necessary to expose the upper limits of tumor.¹⁰ When the tumor is completely impacted in the pelvis so that there is no place for the hand to separate the tumor from its capsule, myomectomy screw is employed. Sometimes, experience with a large fibroid is traumatic, although traction on the screw undoubtedly will reduce the hemorrhage. The principle of wedge resection can be used or hemi-hysterectomy till the capsule of the myoma.^{5,10,13}

In vaginal part fibroids, if the tumor is sessile, myomectomy and if pedunculated, polypectomy is done.

As regards to injuries to the pelvic ureter, it is rare to partially resect the ureter; more commonly, it is completely resected. The management is to anastomose the ends of the ureter, having first made the ends spatulate. The ends will be sutured using 4.0 vicryl over a ureteric stent. The commonest stent used is the "pigtail" Silastic stent. The upper end of the stent is inserted into the renal pelvis and the lower end into the bladder. Extraperitoneal drainage is needed. The operative area should be drained to monitor for leakage of urine during the first few days.^{3,4}

CONCLUSION

In case of large cervical fibroids, the anatomy will be altered and there are chances of injuring the uterine vessels, the bladder and the ureters as they will be in close proximity to the fibroid. In our case in spite of the fibroid being huge, vascular and deeply impacted in the pelvis, the whole tumor was removed *in toto* successfully without any significant hemorrhage. The patient was

discharged without any residual complications. Thus, we conclude when myomectomy is planned it is always preferred to work within the capsule as it prevents ureteric injuries. A sound anatomical knowledge and proper surgical techniques are essential to prevent complication while operating such cases. Intraoperative delineation of ureters and preoperative ureteric stenting are essential precautions, but could not be done in above case due to anatomical distortion. New diagnostic modalities like USG (transvaginal sonography), CT scan, IVU (intravenous urogram) can improve the accuracy of preoperative diagnosis but final diagnosis can only be made at the time of laparotomy.

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Cardiac Arrest

Formula of 10: Within 10 minutes of cardiac arrest for the next at least 10 minutes compress the center of the chest (as hard as one can) with a speed of at least $10 \times 10 = 100$ /minute and do not stop chest compressions for more than 10 seconds (for using a defibrillator to give an electric shock). Eighty percent people can be saved with this.

Formula of 2: While doing chest compression CPR, give 2 thumps in the center of the chest every 2 minutes or defibrillate every 2 minutes and change guards every 2 minutes.

Prehypertension

Rule of 3: A person with prehypertension, systolic 'upper' BP between 120-140 mmHg and diastolic 'lower' BP between 80-90 mmHg, is more than three times likely to have a heart attack and 1.7 times more likely to have heart disease than a person whose BP is lower than 120/80 mmHg.

Rule of 45: If prehypertension is aggressively treated, 45% of all heart attacks can be prevented.