

Surgical challenges in fibroid uterus - case series

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Abstract:

Background: It is an art and skill to surgically remove large and difficult fibroid & hysterectomies. This case series mentions variety of fibroids at different ages including pregnancy & numerous ways of surgically handling them successfully. **Objectives:** To study various surgical challenges and ways to overcome them in fibroids. **Method:** Total 10 cases with challenging surgeries were studied at Govt Medical College Hospital, Aurangabad from May 2018 to May 2019. Demographic details, presenting complaints, clinical examination findings, imaging techniques, investigations and operative difficulties and measures to prevent complications were studied. **Results:** Some presurgical techniques like preoperative use of GNRH analogue, preoperative stenting of ureter, anaemia correction and intraoperative techniques like hemi section of uterus, enucleating the fibroid using correct surgical plane, identifying ureter and surgical expertise helped to avoid all complications in surgery. **Conclusions:** Knowledge of altered anatomical structures, meticulous surgery by an expert following all surgical principles in fibroid surgery prevent injuries to the urinary tract, reduce blood loss and make surgery successful.

Keywords: Fibroid, uterus, surgery, menstrual symptoms, hysterectomy.

Fibroid is the commonest benign uterine tumour. They could be intramural, subserosal, submucosal, cervical, and in broad ligament. Fibroids increases in size and become more vascular in pregnancy. They are associated with various intrapartum and postpartum complications.

Fibroid are usually asymptomatic, while in symptomatic one's commonest symptom is abnormal uterine bleeding¹ and is the most common indication for hysterectomy.² They are usually diagnosed on physical examination. Their symptoms depend on location of fibroid. There are various operative challenges in long standing huge fibroids and myomectomy cases unfortunately may need hysterectomy.

Long standing huge fibroids on abnormal localisation are challenging. Surgical difficulties are due to poor access to the operative field, difficulty in suturing the repairs, increased blood loss and distortion of the anatomy of the vital neighbouring structures like ureter and blood vessels. It is an art and skill to surgically remove large size fibroid and do difficult hysterectomies. Various surgical skills should be used in caesarean sections with fibroid uterus to avoid complications. The present cases were studied during a period of 1 year from May 2018 to May 2019.

Case 1: Cervical fibroid

49-year-old obese and hypertensive null gravida had incomplete evacuation of urinary bladder with increased frequency of urination and dysmenorrhea, with primary infertility of 25 years. On examination (O/E) mass is 18 weeks pregnant size uterus with regular surface. On per vaginal examination 10 x 10 cm² pinkish mass was seen completely obscuring the cervix with no discharge and bleeding. On CECT abdomen, pelvis 10.7x9.3x8.9 cm³ size fibroid in cervix & lower uterine segment and 2 fibroids in uterus seen. Preoperatively DJ stenting was done to make ureters safe. Intra-op uterus was impacted with in pelvis and difficult to deliver. Sigmoid colon was adherent to posterior wall of uterus which was dissected out. Bilateral ureters were traced. Even after dissecting the bladder to the fullest possible extent, the lower anterior end of the cervix could not be made out. Then transverse incision was taken over the lower part of anterior wall of uterus. The capsule of fibroid was opened transversely for 5 cm. Enucleation of cervical fibroid done slowly with myoma screw by counter traction on the surrounding structure and finally huge cervical fibroid of 10x9x8 cm³ size removed and rest of total abdominal hysterectomy done as usual (figure 1). DJ stent removed after 6 weeks.

Figure 1: Cervical fibroid



Case 2: Hemi section of uterus

23yrs unmarried women had menorrhagia for 1 year and acute urinary retention since last 8 days. She had mass arising from pelvic region 24 weeks pregnant size. USG suggests posterior intramural fibroid of 7x8x7cm³ size with multiple other fibroids. On exploratory laparotomy, fibroid uterus was seen completely occupying the pelvis with multiple fibroids, which were difficult to dissect. Considering the possibility of requiring hysterectomy in nulliparous, excessive hemorrhage and injury to surrounding structures procedure was withheld. 3 cycles of GNRH agonist with add back therapy was given. On second exploratory laparotomy, all Myomas were removed. After 2 years she again presented with cervical and multiple other fibroids developed newly. On third laparotomy, hysterectomy became mandatory. Hemi section of uterus anteriorly up to lowermost limit of the body was done. A thick pedicle of 3 cm size arising from anterior wall, projecting into the uterus and forming a broad polyp which was going lower down and constricted at cervix was seen. That pedicle was cut with great difficulty but because of hourglass shape mass with thick pedicle on one side and fibroid on another side, so intact removal was not possible either vaginally or abdominally. Debulking was done using the scalpel vaginally. Finally, that huge fibroid was removed. Rest hysterectomy done as usual.

Case 3: Enucleation of large fibroid

40-year-old P2L2 came with lump in lower abdomen with pain and menorrhagia for 1 year with difficulty in passing urine and stools since last 2 months. On per abdominal examination 24 weeks' size mass was found. On per vaginal examination cervical Os was 2 cm dilated and fibroid mass occupying uterus and cervix felt through cervix from 6 o'clock and 12 o'clock position. On per rectal examination, rectum was free from mass. MRI revealed 18x12x13.5 cm³ fibroid in right lateral and posterior side, while uterus was displaced left side anteriorly and right sided moderate hydronephrosis and hydroureter secondary to compression by fibroid. DJ stenting was done. On exploratory laparotomy, fibroid of size 18 x 18 cm² mainly on right side anteriorly and posteriorly reaching lower down up to cervix was seen while uterus was deviated to left side anteriorly. Uterus was stuck in pouch of Douglas and not

possible to deliver it completely. Right side round ligament stretched up to 20 cm. Anterior and posterior peritoneum separated and pushed downwards to ensure safety of bladder. Transverse incision was taken on ant wall of fibroid and plane of cleavage between fibroid and capsule was made out and fibroid was enucleated from its bed (figure 2). Then hysterectomy was done hereafter as usual.

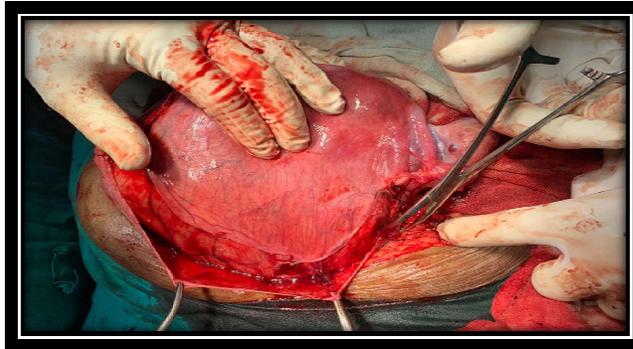


Figure 2: Enucleation of large fibroid

Case 4: Enucleation of cystic degenerated fibroid

36-year-old P2L2 came with chief complaints of chronic dull aching abdominal pain in lower middle quadrant associated with menorrhagia and dysmenorrhea for 1 year. Her USG revealed 9.8x7.7 cm² size submucosal fibroid in anterior wall of uterus with cystic degeneration. Her MRI confirms 10x11x8.8 cm size intramural fibroid in anterior wall of uterus with cystic degeneration. Intraoperatively fibroid of size 10x10 cm² was seen anteriorly. After proper dissection transverse incision was taken on ant wall of fibroid and by finding plane of cleavage between fibroid and capsule, fibroid was enucleated from its bed (figure 3). Then total abdominal hysterectomy was done as usual.



Figure 3: Enucleation of degenerated fibroid

Case 5: Myomectomy of 2.5 kg fibroid

35-year-old women had chronic abdominal pain with menorrhagia for 1 year with primary infertility of 15 years. Her MRI showed huge fibroid of size 17x14 cm² in myometrium of left lateral uterine wall extending up to fundus. Intraoperatively uterus was seen deviated to right side while huge fibroid on left side. Peritoneum was separated anteriorly and posteriorly; plane of cleavage was found between fibroid and myometrium. Fibroid was enucleated. Fibroid weighted 2.5 Kg and about 16x15 cm² in size. Then cavity was obliterated by taking stitches. Myomectomy was performed successfully.

Case 6: Large broad ligament calcific degenerated fibroid

60-year-old P1L1 presented with complaints of chronic lower abdominal pain from 2 years. On per abdominal examination uterus size was 28 weeks size. CECT showed large broad ligament pedunculated fibroid of size about 14x12x18 cm³ size with multiple calcific degeneration. Intraoperatively a huge left broad ligament fibroid measuring approximately 20 cm in its widest diameter was seen. Uterus was deviated to right side. The mass was extending deep in the pelvis to the level of the ischial spine. The round ligament stretched over the mass was incised incision was extended to the capsule of the mass. The plane of cleavage was identified, and the mass was enucleated gently following the capsule avoiding injury to the ureter. The mass had mainly blood supply from pelvic vessels. Then, total hysterectomy with bilateral salpingo-oophorectomy was done.

Case 7: Fibroid during caesarean section

29-year-old primigravida at 38 weeks of gestational with breech presentation with severe preeclampsia in latent labour with multiple subserosal fibroids underwent emergency LSCS. Intraoperatively multiple subserosal fibroids were seen involving all sides of uterus with largest measuring 4x4 cm² size majority on fundus side (figure 4). LUS was incised at fibroid free area. Rest surgery was done as usual.

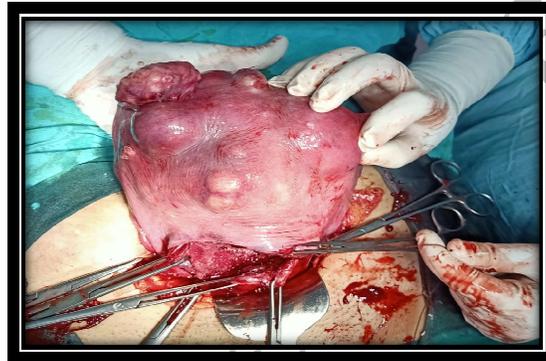


Figure 4: Fibroid during caesarean section

Case 8: Broad cervical fibroid polyp

42-year-old P4L4 came with of menorrhagia for 2 years. On per vaginal examination uterus was 14 weeks' size with cervical fibroid polyp extending from cervix of size 2 cm was felt. Her USG showed 7.4x7.2 cm² size fibroid in right lateral wall of uterus in lower segment. Intraoperatively about 7x7 cm² size broad ligament fibroid was seen on right side of uterus. There was no proper plane of cleavage between fibroid and uterus. There was difficulty in applying clamp near cervix as lower segment of uterus was ballooned by fibroid polyp. So, after proper dissection of uterus, hemi section of uterus was done. Pedicle of fibroid polyp was cut and polyp was pushed and removed vaginally making the cervix collapsed. Hereafter hysterectomy was done as usual (figure 5).



Figure 5: Broad cervical fibroid polyp

Case 9: Large fibroid missed on obstetrics USG

23-year-old primigravida with overdue 2 days with dysfunctional labour had caesarean section. None of the 3 antenatal USG showed fibroid. Intraoperatively large fibroid of 15x12x10 cm³ size was seen in posterior wall in lower side of uterus on right side (figure 6). As there was difficulty in delivery of head incision was extended in lower direction in lower segment on right side. Rest procedure done as usual.

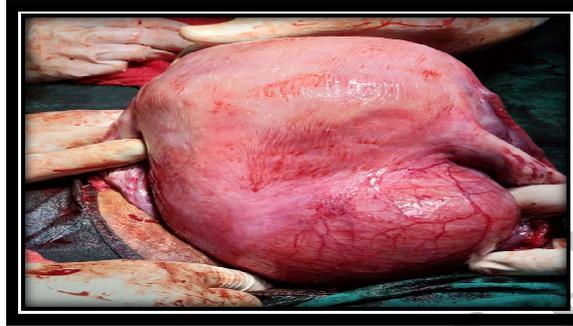


Figure 6: Large fibroid missed on obstetrics USG

Case 10: Infected cervical fibroid polyp

42-year-old had menorrhagia since 6 months and mass felt in vagina for 1 month. On examination 6x6 cm² size globular, firm in consistency, foul smelling, whitish, infected mass was seen in vagina extending up to introitus (figure 7). USG revealed 6x6 cm² size fibroid polyp arising from posterior wall of uterus. Infection treated. Intraoperatively multiple small fibroids were seen in uterus with lower part of cervix and vagina was seen distended by fibroid polyp. Body of uterus properly dissected. Then hemi section of uterus was done. Thick pedicle was seen attached to posterior wall of uterus. Pedicle was cut and fibroid polyp was pushed and removed vaginally.



Figure 7: Infected cervical fibroid polyp

Discussion

Preoperative GNRH analogue administration for 3 months reduces intraoperative blood loss and facilitates surgery by reducing size and vascularity of fibroid. However, they can destroy the fine plane of cleavage between capsule and surrounding structures. SK Samal et al (2014) study favoured preoperative use of GNRH analogue in a case of central cervical fibroid which successfully reduced size of fibroid³. Mendiratta S et al (2017) study also favoured use of GNRH analogue similar to our study⁴. Preoperative imaging with USG, MRI or contrast CT will help to detect altered anatomy and mapping of fibroids. In huge fibroids operative difficulty is because of distorted anatomy of ureters, urinary bladder, uterine vessels and rectum. So, to avoid injury to ureters preoperative DJ stenting was done in case 1 and case 3.

The surgical principle to avoid injury to surrounding structures is to enucleate the fibroid, to remain in proper plane between fibroid and capsule⁵ to avoid injury to ureters. Enucleation of fibroids also helps to correct anatomy before placement of clamps. This principle was followed in all cases.

Cervical fibroids are 2% of fibroids⁶. Surgical difficulties associated with these cases are, poor access to the operative field, difficulty in suturing the repairs, increased blood loss, and distortion of the anatomy of the vital neighbouring structures in the pelvic cavity⁷. Sharma et al, 2001 from Srilanka reported operation of huge fibroid with injury to left ureter requiring anastomosis⁸. Basnet et al, 2005 in Nepal also reported a case of huge cervical fibroid in which during surgery urinary bladder injury occurred that was repaired⁹. Dissect urinary bladder as much as possible and push it downwards to ensure its safety. In case of central cervical fibroid Rotherford Morrison's hemisection of the uterus technique was done. In that fibroid was enucleated from the central part without injuring the ureter, bladder and uterine vessels. In such cases after hemisection of uterus, pedicle of polyp was cut and fibroid delivered vaginally. Same technique was described in SK Samal et al study³.

In broad ligament fibroids it is very important to identify ureter course by ureteric dissection and direct visualisation during surgery¹⁰. According to Ahmed Samy et al (2018) study surgery is challenging, especially since surrounding organs such as ureters, intestines, and urinary bladder may be at risk¹¹.

Fibroid increases in size and become more vascular in pregnancy. Fibroids are missed in obstetrics USG because of myometrial thickening. Fibroid in pregnancy increase spontaneous miscarriage, preterm labour, placenta abruption, malpresentation, labour dystocia, caesarean delivery and postpartum haemorrhage. Malpresentation, large fibroids, multiple fibroids, submucosal fibroids, and fibroids in lower uterine segment predispose to caesarean delivery¹². During caesarean on fibroid uterus, avoid injury to fibroid as they are very vascular and bleed profusely. Similar cases of fibroid landed in LSCS were described in Klatsky PC et al¹³ and Muthuramu Poovathi et al¹⁴ study. Kathalia SK et al (2016) study states myomectomy can be performed during caesarean depending on accessibility and safety¹⁵. Vasilios Pergialiotis et al study, demonstrated an increase in operative time and hemoglobin drop in those who had caesarean myomectomy compared with caesarean delivery alone¹⁶. This study also states that caesarean myomectomy may be considered in cases of isolated myomas. In our study, myomectomy was not done as all cases were emergency surgeries with complications like severe anaemia, severe pre-eclampsia.

Conclusion

Pre-operative adequate preparations with general build-up for anaesthesia and surgery, imaging studies, ureteric stenting wherever required, use of GNRH analogues and following the principles of fibroid surgery, made successful fibroid surgeries possible with no surgical morbidity and mortality. Caesarean section is common mode of delivery in fibroids in pregnancy with no major complications.

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