

## Surgical approach to neglected giant cervical fibroids

Cagdas Nurettin Emeklioglu<sup>1</sup>, Emine Aydin<sup>1</sup>, Merve Konal<sup>2</sup>, Hicran Acar Sirinoglu<sup>1</sup>, Erhan Akturk<sup>1</sup>, Ozgur Akbayir<sup>2</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Prof. Dr. Cemil Tascioglu City Hospital, Istanbul, Turkey; <sup>2</sup>Department of Obstetrics and Gynecology, Gynecologic Oncology Unit, Prof. Dr. Cemil Tascioglu City Hospital, Istanbul, Turkey

### ABSTRACT

Cervical fibroids are rare neoplasms of uterine origin whose management has not been standardized. Cervical fibroids, which can be challenging in surgical management, can become a difficult problem for the surgeon when neglected or asymptomatic and reach gigantic dimensions. Suspending the aorta abdominalis or arteria iliaca communis with vascular tapes and balloting the uterus with the help of vaginal taping while searching for the correct cleavage may reduce the risk of intraoperative hemorrhage and adjacent organ injury, as well as may be guide for the steps of the operation. Management of neglected giant cervical fibroids may not be suitable for testing alternative treatment methods to surgery used in the treatment of uterine neoplasms. However, surgical management will also be challenging. For this reason, the technique we describe can help the surgeon with clues that should be considered in the surgical management of these patients.

**Keywords:** Gynecological surgery, uterine fibroid, neglected, cervical leiomyoma

Uterine leiomyomas are one of the most common benign neoplasms in women. 95% of myomas, the frequency of which reaches 70% in women of reproductive age, originate from the uterine corpus [1]. Cervical fibroids are seen less than 5 percent of the time. [2]. Although it is usually asymptomatic, in symptomatic cases, the patient is most often admitted to the hospital with abnormal uterine bleeding, chronic pelvic pain, urinary and gastrointestinal complaints associated with pressure.

In the subclassification of leiomyomas published by FIGO in 2011 regarding abnormal uterine bleeding, cervical myomas were included in the other group, which is type 8 [3]. Over the years, cervical fibroids have been examined as classified into subserosal (extracervical) and intracervical (intracervical) fibroids.

Location is one of the most important parameters in choosing a surgical method [2, 4].

Surgical procedures applied to cervical fibroids may be more difficult than fibroids originating from the corpus uteri. This, increased intraoperative hemorrhage, is due to an increased risk of adjacent organ injury related to impaired pelvic anatomy caused by dislocated pelvic organs because of cervical myoma. For these reasons, it would be better to involve experienced surgeons who have knowledge of retroperitoneal anatomy and, if possible, experience in gynecological oncology in operations related to neglected giant cervical fibroids [5]. The preoperative diagnosis of our patients was made by ultrasound and contrast-enhanced lower-upper abdomen MR imaging. Preoperative diagnosis of cervical myoma was made

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**Address for correspondence:** Cagdas Nurettin Emeklioglu, MD., Prof. Dr. Cemil Tascioglu City Hospital, Department of Obstetrics and Gynecology, Kaptanpaşa Mah. Darülaceze Cad. No:27, Şişli, Istanbul, Turkey. E-mail: c.n.emeklioglu@gmail.com, Phone: +90 212 314 55 55, Fax: +90 212 221 78 00



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[info@prusamp.com](mailto:info@prusamp.com)

by the same gynecological oncologist (ÖA).

Currently, there is no standardized approach or technique in the treatment of cervical fibroids. This causes the change in the chosen treatment according to the experience of the center and the surgeon, the accessibility of current techniques, and patient-related variables. Therefore, the size of the fibroid, its location in the cervix, its relationship with neighboring organs are other factors that determine the operation technique and the difficulty coefficient. In recent years, with increased uterus-sparing approaches, there has been a tendency towards uterus-sparing surgical procedures and radiological techniques. However, uterine-sparing surgeries may not be possible in neglected giant fibroids due to insufficient surgical field, increased risk of intraoperative bleeding and impaired pelvic anatomy. With this study, we aimed to give surgeons an alternative idea to deal with such large cervical fibroids and to share our approach to management.

## CASE PRESENTATIONS

### CASE 1

The 37-year-old patient, gravida 3, parity 2, abortus 1, had no known disease other than lumbar disc herniation and gastroesophageal reflux, and had no additional features in her history, had complaints of men-



**Fig. 1.** Sagittal plane MRI of the giant cervical fibroid.

orrhagia and abdominal bloating. On examination, there was approximately 25 cm multiple myomatous uterus extending to the umbilicus. In order to reduce the risk of bleeding during the operation, the abdominal aorta was turned approximately 1 cm above the aortic bifurcation with vascular tape and suspended for approximately 15 minutes. There was no need for intraoperative transfusion. Postoperatively, one unit of erythrocyte suspension was transfused. The pathology result was reported as 25×15×10 cm leiomyoma starting from the lateral cervix and extending to the uterus corpus (Fig. 1).

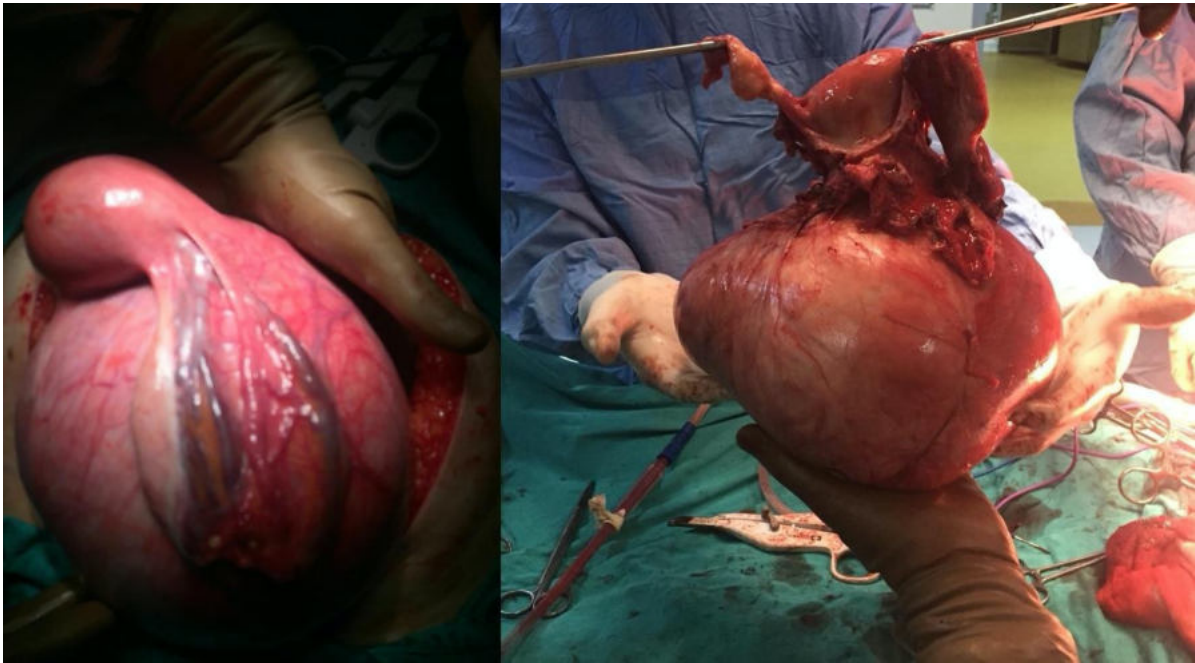
### CASE 2

The patient, who was 46 years old, had gravida 5, parity 2 and abortus 3, had a known chronic hypertension disease and was using amlodipine for this reason, and had no additional features in her history, had a complaint of urinary incontinence. In her routine examination, myoma uteri with a diameter of 13×14 cm, which was thought to originate from the cervix, was detected. Before the specimen was removed during the operation, bilateral arteria iliaca communis were suspended for approximately 12 minutes with the help of vascular tapes in order to reduce bleeding. No massive



**Fig. 2.** Degenerated leiomyoma extending from the cervix.



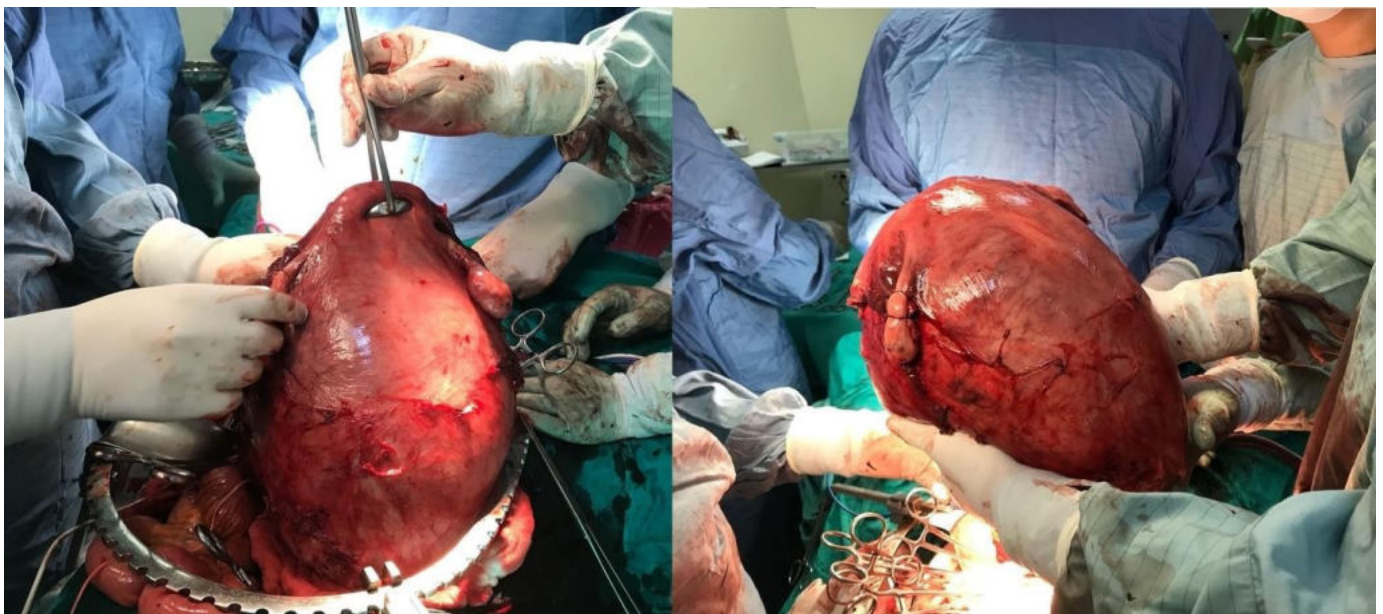


**Fig. 3.** Intraoperative view of giant cervical myoma.

bleeding was observed during the operation and no need for blood transfusion occurred during the post-operative period. In the pathology report, a degenerate myoma nodule with a diameter of approximately 13 cm, localized on the anterior wall extending from the cervix, which was visible when the uterus was cut, was observed (Figs. 2 and 3).

### CASE 3

The 44-year-old patient, who was gravid 0, parity 0, had no features other than being a Hepatitis B carrier in her history, had no additional complaints other than abdominal swelling. On examination, giant myoma uteri, which was thought to be of cervical origin, enlarged the uterus to the xiphoid, bilateral grade



**Fig. 4.** Intraoperative image of cervical myoma measuring approximately 33 × 17 cm.

3-4 hydronephrosis was observed. Due to preoperative anemia, 2 units of erythrocyte suspension and 2 units of fresh frozen plasma were transfused. Horseshoe kidney and bilaterally dilated ureters were present on exploration. Urology consultation was requested, and it was said that no additional intraoperative intervention was required. In order to reduce the risk of bleeding during the operation, the abdominal aorta was turned approximately 2 cm above the aortic bifurcation with vascular tape and suspended for approximately 25 minutes. At the end of 25 minutes, the aortic tape was cut and removed (Fig. 4). There was no need for additional post-operative blood transfusion. Although the cervix could not be observed separately in the pathology report, a giant myoma measuring approximately 33 × 17 cm was observed.

For these cases, we prepared the patients in the dorsal lithotomy position, and we also stained the vaginal and vulvar areas during routine povidone iodide staining. We always started the operation with a median incision below and above the umbilicus, and we always kept an extra person ready in the operation area in case there is a need for vaginal manipulation. Before proceeding to the surgical steps before entering the abdomen, suspending the aorta abdominalis approximately 1 cm above the aortic bifurcation if possible, and if not possible, suspending the arteria iliaca communis with vascular tapes is the most appropriate precaution that can be taken to prevent possible vascular complications and to reduce intraoperative hemorrhage. In case 2, we applied tape to the bilateral arteria communis because of the mass, and in the other two cases, we applied tape over the aortic bifurcation.

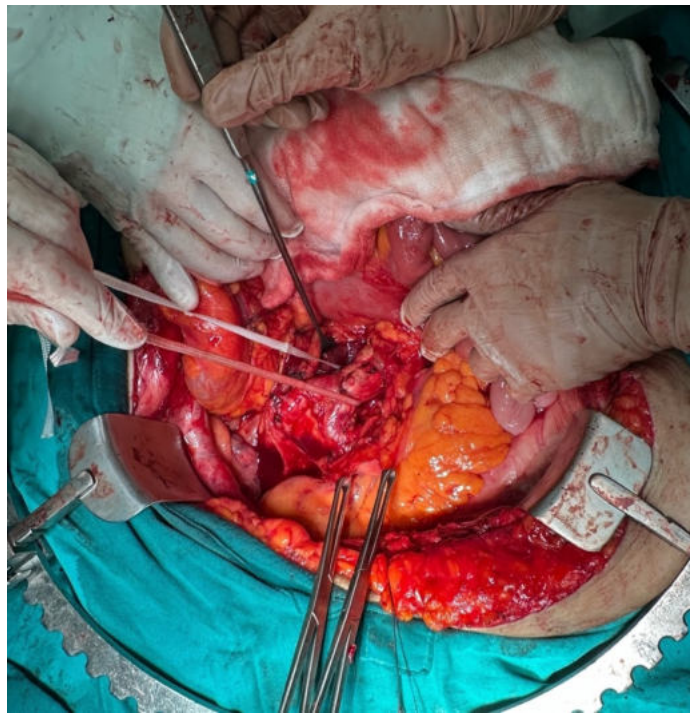
In these 3 cases, the tapes were be left loose throughout the operation, and in the presence of possible bleeding, they were tightened without knotting. We had dissected bilateral ureters in the retroperitoneal space and lateralized. After the arteria uterinae were ligated at the cervico isthmic junction, the anterior and posterior fornix were balloted with the touch of the 3rd person, who was take place between the legs; and the vagina was entered in the relevant region by palpating the fingers on the abdominal vaginal touch and guiding to find the right cleavage.

## DISCUSSION

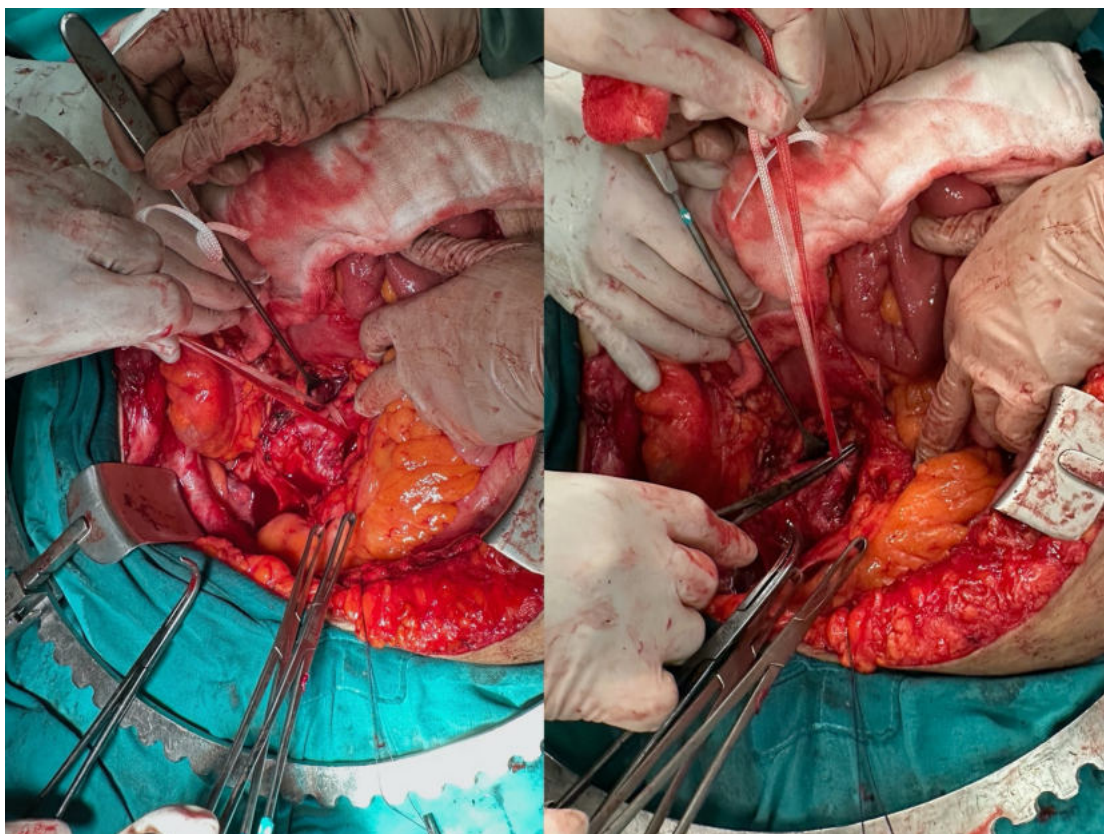
Our aim to share this study is, with the approach we will describe, to reduce the need for postoperative blood transfusion related to intraoperative hemorrhage, and to minimize adjacent organ damage in the anatomically overturned pelvic area by the traction method we will explain. We did not encounter any unusual intraoperative bleeding in 3 cases performed with this method, blood transfusion was not required in 2 of our patients, and no adjacent organ damage was reported.

In a literature review in which studies on all cervical fibroids were examined, the rate of complication development was reported as 5.6% [5]. It is inevitable that this rate stated in this review, which is reported independently of myoma size, will increase as the size of myoma increases. Since the surgical technique will be difficult in cervical fibroids larger than 4 cm, the approach we present in neglected giant fibroids can reduce the risk of surgical complications and prevent the risk of accompanying mortality. In our clinic, we prepare the patient in the dorsal lithotomy position for giant cervical myoma surgery, and we also stain the vaginal and vulvar areas during routine povidone iodide staining. We always start the operation with a median incision below and above the umbilicus, and we always keep an extra person ready in the operation area in case there is a need for vaginal manipulation. Before proceeding to the surgical steps before entering the abdomen, suspending the aorta abdominalis approximately 1 cm above the aortic bifurcation if possible, and if not possible, suspending the arteria iliaca communis with vascular tapes is the most appropriate precaution that can be taken to prevent possible vascular complications and to reduce intraoperative hemorrhage (Fig. 5). The tapes should be left loose throughout the operation, and in the presence of possible bleeding, they are tightened without knotting and fixed with instruments (Fig. 6). In an animal experiment, it was reported that after 1 hour of the abdominal aorta tourniquet method in pigs (swine), all functions returned and no ischemic damage occurred [6]. We suggest that the tapes can be loosened for 1-2 minutes in order to avoid ischemic damage in patients





**Fig. 5.** Suspending the aorta abdominalis approximately 1 cm above the aortic bifurcation.



**Fig. 6.** Intraoperative image of cervical myoma measuring approximately 33 × 17 cm.

who need vascular sling for periods longer than 30 minutes.

Uterine manipulators conventionally placed before surgery may be preferred to facilitate the abdominal approach; however, it may not be possible to use in the presence of masses where the cervix has been eroded and the cervix is bulging towards the vagina. After the arteria uterinae are ligated at the cervico-isthmic junction, the anterior and posterior fornix are balled with the touch of the 3rd person, who will take place between the legs; and the vagina is entered in the relevant region by palpating the fingers on the abdominal vaginal touch and guiding to find the right cleavage. If the fingers cannot be reached, as the sacrouterine ligaments are cut and ligated in classical hysterectomy; after the uterine arteries are ligated, the tissues from the appropriate area are continued to be dissected until they reach the fingers in the vagina. This surgical approach which seems to be simple, can be life-saving when it is considered, as the risk of complications will increase if it is not considered. We called all 3 patients, whom we operated with the method we described, for control 3 times in the 1st year following the operation, and no complications were observed in the post-operative follow-up. The largest reported cervical myomas that we could reach in the literature is the case series published by Tian and Hu [7], which includes 3 cases with a diameter greater than 20 cm. Cervical myoma measuring 20 × 10 cm, which was also published by Wong *et al.*, was one of the largest cervical myomas we could reach [8]. Therefore, with this article, we describe a surgical approach, but also present the neglected cervical fibroids larger than the cervical fibroids in the literature. In the three cases we presented, no malignancy was observed in the pathology report.

Preoperative GnRH agonist, intraoperative vasopressin injection and uterine artery ligation are other methods that can be used to reduce the risk of intraoperative hemorrhage, especially in patients who will undergo myomectomy [9]. As the size of the fibroid increases, it is fed from the surrounding vessels due to increased neovascularization, which may render uterine artery ligation dysfunctional or insufficient in such neglected giant fibroids.

In addition to surgical treatment, radiological techniques are among the alternative treatment options. It seems to be an option that can be preferred especially

in patients who do not want hysterectomy or who want to preserve their fertility. However, a 6-10% failure rate for uterine artery embolization has been reported [10, 11]. In another study, 89% of the patients had post-procedure pain, which they described as severe [12]. In a study published by Kim *et al.* [13], the rate of complete necrosis was reported as only 20%, and the probable cause of this was stated as difficulty in catheterization, feeding of myoma from collaterals coming from the ovarian artery, and the presence of concomitant adenomyosis. Balloon occlusion of the abdominal aorta, which is applied before cesarean sections with a high risk of bleeding, is another alternative to surgery that can be preferred [14]. However, we think that studies on this subject are needed due to risks such as vascular injury, pseudoaneurysm, aortic dissection or rupture, ischemic nerve damage that increase mortality and morbidity [15].

## CONCLUSION

For all these reasons and due to the impossibility of applicability of these alternative methods in neglected giant fibroids, we suggest the surgical approach we have described as an alternative method. We think that more studies are needed to standardize the treatment of all cervical myomas and to develop systematic algorithms.

### *Ethical Approval*

These Case Series were approved by İstanbul Prof. Dr. Cemil Tascioglu City Hospital Clinical Research Ethics Committee (Date:20/06/2022, Decision no:206).

### *Informed Consent*

Written informed consent was obtained from the patients for publication of these case series and any accompanying images or data.

### *Authors' Contribution*

Study Conception: CNE, EAY, HAS, OA; Study Design: CNE, MK, HAS, EAK, OA; Supervision: HAS, EAK, OA; Funding: CNE, EAY, MK; Materials: CNE, MK, OA; Data Collection and/or Processing: CNE, EAY, EAK, OA; Statistical Analysis and/or Data Interpretation: CNE, MK, HAS, OA; Literature Re-

view: CNE, EAY, EAK; Manuscript Preparation: CNE, HAS, OA and Critical Review: CNE, OA.

### Conflict of interest

The authors disclosed no conflict of interest during the preparation or publication of this manuscript.

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