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Research Article

Sharing of Surgical Techniques a Modified Surgical Procedure For the Treatment of Ischial Tuberosity Cysts Via Arthroscopy

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Abstract

Background: Ischial tuberosity cysts are a common clinical problem. However, because of their location, the infection rates are very high. The minimally invasive treatment of ischial tuberosity cysts using arthroscopy has been reported. After my trial, I observed a relatively high incidence of complications. Consequently, based on peer research, I modified this surgical procedure with the aim of enhancing the cure rate. **Methods:** The reported surgical method uses arthroscopy to remove all the walls of the ischial tuberosity cyst, stop the bleeding thoroughly, place a drainage tube, and then place the patient supine to compress the original cyst site continuously. I applied this surgical procedure and observed unsatisfactory clinical outcomes, which were characterized by a high propensity for postoperative local hematoma formation that subsequently gave rise to symptoms resembling recurrence. Therefore, on this basis,Under arthroscopy, a 4.5-mm absorbable suture anchor is placed at the ischial tuberosity, followed by suture closure of the original cyst site starting from the base. Silicone ball negative pressure drainage may be selected according to specific clinical conditions. No further continuous compression of the cyst site is required postoperatively. **Results:** In all instances where the modified surgical procedure was applied, and no local hematoma or infection was observed, primary healing was achieved for all surgical incisions, resulting in satisfactory postoperative outcomes. **Conclusion:** The modified procedure employs suture anchors to achieve complete sealing of the original cyst site, thereby eliminating the possibility of local hematoma and recurrence. Furthermore, during minimally invasive arthroscopic surgery, continuous irrigation with a large volume of sterile saline is performed, which significantly reduces the risk of infection. Clinical verification confirms that this surgical approach is simple and effective. Compared with conventional incision surgery, it can also considerably reduce surgical pain for patients.

Keywords: Ischial Tuberosity Cyst; Arthroscopy; Minimally Invasive; Suture Anchor; Ischium

Introduction

Ischial tuberosity cyst [1-5] is a common clinical disease that typically occurs in older adults, and the majority of patients seek medical attention due to pain. However, as ischial tubercle cysts are generally located adjacent to the anus, surgical incisions for the treatment of this condition are typically positioned in close proximity to the anus. The most common complication following routine surgery is infection [6]. This condition brings suffering to patients and places considerable pressure on operating surgeons. In recent years, domestic clinicians have reported an arthroscopic surgical approach for the treatment of ischial tuberosity cysts [7-10]. Following my clinical application of this approach, I identified that it still has certain limitations, and is predisposed

to postoperative complications such as local hematoma. On this basis, I implemented improvements to the surgical procedure and achieved favorable clinical outcomes, which are reported as follows:

Objects and Methods

Research Objects

In June 2024, our department admitted one patient diagnosed with ischial tuberosity cyst, and surgical treatment was implemented in accordance with the procedure reported by peer clinicians. However, on postoperative day 13, the patient was readmitted due to local hematoma, and underwent conventional surgical intervention combined with VSD drainage, which eventually resulted in complete wound healing. Following this case, I refined the surgical technique and obtained approval from the ethics committee of my hospital. From October 2024 to September 2025, the modified procedure was performed on a total of 8 patients with ischial tuberosity cysts, and favorable clinical outcomes were achieved.

Methods

Surgical Approach(Figure 1-3)

The anatomical region of the sciatic nerve must be strictly avoided(Figure 1). Given the anatomical morphology of the buttock and to facilitate surgical operation, the arthroscopic approach incision is conventionally positioned approximately 2–3 cm below the highest point of the ischial tuberosity cyst and approximately 1 cm lateral to it (this location is defined as the primary site for arthroscopic visualization). Furthermore, 1–2 small incisions shall be made as required to insert a shaver or plasma electrosurgical unit for tissue clearance and hemostasis procedures.

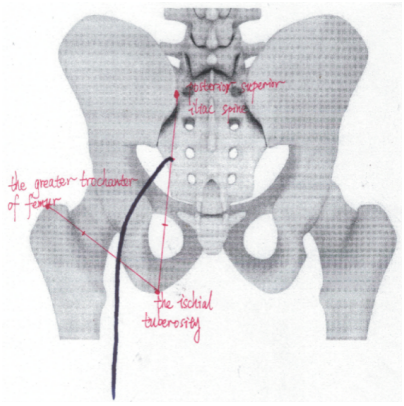


Figure 1: The region demarcated by the black line corresponds to the safe operative area.

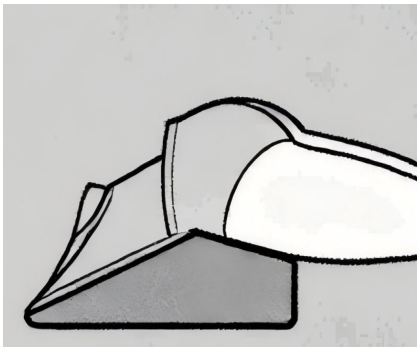


Figure 2: This is a schematic diagram depicting the position of the surgical patient.



Figure 3: This illustration presents the view from the surgeon's perspective prior to the completion of patient preparation and the initiation of surgery.

Surgical Procedure Steps [11-15]

Firstly, a puncture needle is inserted directly into the cyst, and successful puncture is confirmed by the discharge of dark brown fluid from the back edn of the needle. Subsequently, a sharp-pointed puncture cone is introduced through the arthroscopic sheath after withdrawal of the puncture needle. Subsequently, the arthroscopic sheath is advanced along the needle trajectory into the ischial tuberosity cyst, with a distinct breakthrough sensation noted upon insertion. Subsequently, the arthroscope is inserted to verify correct positioning within the cyst cavity. Subsequently, all dark brown fluid within the cyst cavity is thoroughly evacuated via the pressure irrigation system and negative-pressure suction of the sheath. Subsequently, the negative-pressure suction is discontinued, and the filling state of the cyst site is maintained via continuous irrigation pressure. Finally, a small incision is made in the safe zone, a shaver is introduced, and debridement of the cyst wall tissue is initiated. Subsequent to complete excision of the cyst wall, hemostasis is achieved via a plasma electrosurgical unit. Finally, the ischial tuberosity is identified within the arthroscopic

field of view (the bony portion at the base of the cyst corresponds to the ischial tuberosity). Drilling procedures are performed on the surface of the ischial tuberosity with an anchor reamer, followed by tapping operations. The reamer is utilized to carefully assess the margin of the ischial tuberosity, and the opening is created at the thickest central osseous point. Subsequently, the residual cavity is copiously irrigated with normal saline under arthroscopic guidance, following which a 4.5 mm absorbable suture anchor is inserted [16]. Suturing of the entire cavity formed subsequent to resection of the ischial tuberosity cyst is performed to obliterate the resultant dead space, thereby preventing hematoma formation and reducing the risk of surgical failure(Figure 4-8). A silicone ball negative-pressure drainage tube is placed at the incision most distant from the anus, while the remaining incisions are closed via direct full-layer suturing.

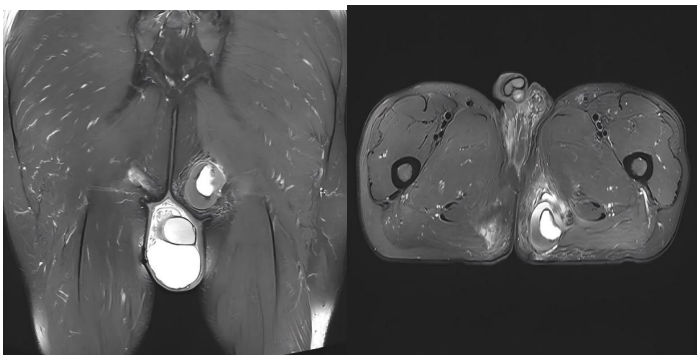


Figure 4: The present case involves a 76-year-old male patient who underwent conventional incisional surgery for a trochanteric cyst at another hospital several years prior to the current presentation. Following recurrence of the condition, the patient sought medical attention at our hospital due to symptomatic pain. The patient is also found to have severe testicular hydrocele; however, the patient considers his current symptoms tolerable and has not received any relevant treatment to date.

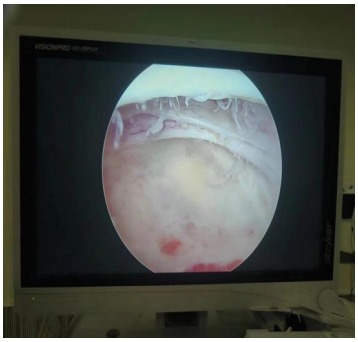


Figure 5: This figure presents the arthroscopic view inside the sciatic tuberosity cyst, enabling visualization of the intact cystic wall.



Figure 6: Given the large size of the cyst, two anchors were implanted at the ischial tuberosity. Although the two anchors are designed to accommodate a total of four sutures, only three sutures were utilized to complete a "□"-shaped suture of the cystic cavity.



Figure 7: The patient underwent surgical intervention with two incisions, each measuring approximately 1–2 cm in length; postoperatively, a drainage tube was placed in one of the incisions.

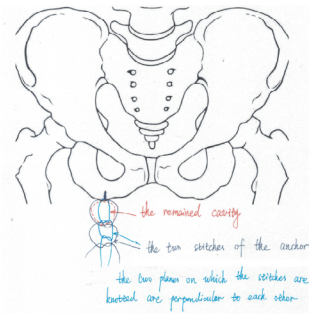


Figure 8: Schematic diagram of the anchor-based suturing technique. A single anchor is conventionally employed for the "□"-shaped suturing technique.

Postoperative Management

The drainage tube shall be removed 24 hours postoperatively (when the drainage volume is ≤50 mL/day; if the drainage volume is higher than this threshold, removal within 48 hours

postoperatively is recommended). Patients shall be instructed to perform ankle pump exercises and isometric contraction training of the quadriceps. Gradual ambulation is permitted on postoperative day 3, while strenuous activities shall be avoided. Suture removal is performed at 2 weeks postoperatively (our department currently uses 9932 sutures manufactured by Johnson & Johnson, which detach spontaneously approximately 15 days postoperatively). Resumption of normal activities is permitted at 1 month postoperatively, while prolonged sitting and heavy physical labor shall be avoided during the first 3 months postoperatively.

Statistical Methods

SPSS 29 software was used to analyze the data, and the measurement information was expressed as mean ± standard deviation.

Results

Indicators	Unmodified	Modified
	n=1	n=8
Age(years)	70	68±8.32
Gender(male/female)	f:1	m:1 f:7

1. In the first case, postoperative recurrence occurred after the unmodified surgical procedure, and the patient was cured following incision and debridement.

2. Among the eight cases ranging from the second to the ninth, all patients underwent surgical intervention using the modified procedure, and all attained primary healing.

3. The overall cure rate of all included cases was 88.9%, and the cure rate of the modified surgical procedure was 100%.

Discussion

1. Analysis of the causes of failure of the unmodified surgical procedure:Following arthroscopic debridement of the ischial tubercle cyst, a large cavity remained. Although meticulous hemostasis was performed, a drainage device was placed, and continuous postoperative compression was applied, local hematoma gradually formed in the late postoperative period due to chronic bleeding, exudation, and other factors, resulting in symptoms similar to those of recurrent ischial tubercle cyst. (local pain, and swelling).

2. Is complete resection of all cyst walls clinically necessary? Complete resection of the cyst wall across all regions of the ischial tuberosity under arthroscopy is a highly time-consuming procedure. In the subsequent 8 cases, the extent of cyst wall resection was progressively controlled to 70%–80%, and no postoperative recurrence or other related symptoms were observed. Accordingly, it is recommended that at least 60% of the cyst wall be resected during the operation. Nevertheless, the current sample size is small, and further clinical verification is required.

3. In cases where the cystic cavity is excessively large, is it clinically permissible to place two suture anchors? This decision should be determined in accordance with the specific intraoperative surgical conditions. If a single suture anchor cannot close the cavity after cyst excision, an additional suture anchor may be utilized. The ischial tuberosity of an average adult has a size sufficient to accommodate the placement of two suture anchors [17-18](Figure 6).

Conclusion

Since only one year has elapsed from the initial application of this technique to its improvement and subsequent re-implementation in clinical practice, the total number of clinical cases needs to be expanded. Further clinical cases are still required to verify the clinical therapeutic effect of this approach. To date, this technique has effectively addressed all adverse complications associated with the surgical treatment of ischial tuberosity cysts, and it is characterized by minimal surgical trauma and satisfactory postoperative recovery. These advantages render it a surgical technique worthy of wider clinical promotion.

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Ethical approval

This research has received the formal approval of Wuxi Branch of Ruijin Hosptial Ethics Committee on September 18, 2024.

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Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability Statement

The data that support the findings of this study are available from the first author upon reasonable request.

References

1. Cui H, Zheng K, Xu M, Chen Q, Zhai K, et al. (2025) Surgical resection of malignant tumors at the ischial tuberosity: a new surgical incision design and clinical experience. Frontiers in Oncology 15: 1578468.
2. Xiao CF, Ding YQ, Pan YB, Cao YQ, Wang C. et al. (2022) Advancement flap technique for a rare complex anal fistula with synovial cyst at the ischial tuberosity. Tech Coloproctol 26(6): 499-501.
3. Lee SH, Jang WY, Lee MS, Yoon TR, Park KS, et al. (2023) Surgical excision for refractoryischioglutealbursitis: a consecutive case series of 21 patients. HipPelvis 35(1): 24-31.
4. Mizouni H, Mrabet D, Fourati M, Khemiri C, Hedhli M, et al. (2012) Apophysosite ischiatique mimant une tumeur osseuse [Apophysitis of the ischial tuberosity mimicking a neoplasm]. Tunis Med. 2012 Jun;90(6):496-498.
5. Lefkovitz AM (1969) Synovial cyst of ischial tuberosity in Felty's syndrome. JAMA 209(7): 1089.
6. Zhu YC, Jia XW, Wang ZY, Wang C, Jin ZP, et al. (2018) Prospective cases-control study on arthroscopic for the treatment of ischial tuberosity cyst. China Journal of Orthopaedics and Traumatology 31(3):217-221.
7. Ouyang P, Tang KX, Fang XX, et al. Medium-and Long-term Efficacy of Modified Approach Arthroscopy for Ischial Tuberosity Cyst. Chinese Journal of mininally invasive surgery 25(9): 570-573.
8. Zhu YC, Mi YF, Jiang B, Dong Q (2022) Clinical efficacy of arthroscopic treatment in ischial tuberosity cyst: A retrospective comparison study. Medicine (Baltimore) 101(3): e28128.
9. Cheng Guolin, Tang Li. (2012) Arthroscopic treatment of ischial tuberosity cyst of 11 cases. Journal of Clinical Orthopaedics 15(4): 468.
10. Tang L, Cheng GL (2011) Comparison of clinical effects between arthroscopic and open surgery in treatment of ischial tuberosity cysts. Journal of Medical Forum 32(19): 58-59.
11. Cheng GL, Tang L, Xu NW, et al. The Anatomical Study on the Safe Arthroscopic Approach for the Treatment of Ischial Tuberosity. World Latest Medicine Information (Electronic Version) . 2016,Vo1.16(98): 27-28.
12. Bharucha AE (2006) Pelvic floor: anatomy and function. Neurogastroenterology & Motility 18(7): 507-519 .
13. Ge XT, Cheng K, Cao FF, Wang B, Wang X, et al. (2022) Endoscopic Ischial Tuberosity Osteophyte Resection for Treatment of Ischiofemoral Impingement: A Case Report. Clinical Journal of Sport Medicine 32(6): e647-e651.
14. Xu R, Ebraheim NA, Biyani A, Yeasting RA (1996) Optimal Technique of Screw Placement in the Ischial Tuberosity for Posterior Acetabular Fractures. Journal of Orthopaedic Trauma 10(3): 160-164.
15. Nayak SB, George BM, Mishra S (2014) A sciatic nerve with three roots and its perforation by the enlarged ischiadic artery. Anatomical Science International 89(2): 118-121.
16. Williams BA, Titus M, Chaclas N, Cardin N, Wells L, et al. (2024) Surgically Treated Ischial Tuberosity Avulsion Fractures in Adolescents: Risks and Outcomes of 3 Fixation Constructs. Journal of Pediatric Orthopaedics 45(1): e30-e36.
17. Chen YL, Yang PJ (2016) A preliminary study of the measurement of external ischial tuberosity width and its gender differences. Journal of Physical Therapy Science 28(3) :820-823.
18. Chen YL (2021) Changes in external ischial tuberosity width at varying trunk-thigh angles between sexes using two measurement methods. Scientific Reports 11(1): 1-7.