MORPHOLOGICAL AND AGE-RELATED CHARACTERISTICS OF COCCYGEAL FISTULAS: A THREE-YEAR CLINICAL OBSERVATION

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Abstract: Coccygeal fistulas represent a heterogeneous group of congenital and acquired lesions, differing in etiology, morphology, and clinical outcomes across age groups. This study analyzes morphological types, diagnostic approaches, and treatment responses among patients treated at the Fergana branch of the Republican Research Center for Emergency Medicine (RRCEM) from 2022–2024. Twenty-eight patients (infants, adolescents, and adults) were evaluated using clinical examination and selective MRI. Surgical management remained predominant, with minimally invasive techniques benefiting pediatric cases, whereas modified excision reduced complication rates in adults. Conservative therapy proved effective mainly in infants with perianal pathology. The findings support age-specific diagnostic and therapeutic strategies to reduce recurrence and improve outcomes.

Keywords: coccygeal fistula, congenital dermoid cyst, pilonidal sinus, MRI diagnosis, minimally invasive surgery, conservative therapy, recurrence prevention

Introduction

Coccygeal fistulas display notable age-dependent morphological variations, particularly between congenital pediatric lesions and acquired adult fistulas. Infant cases often show connections to embryological defects such as incomplete ectodermal closure resulting in dermoid or epidermoid cyst formation, leading to persistent sinus tracts near the coccygeal region [1]. Such lesions are frequently accompanied by sebaceous gland hyperactivity and midline dimpling, underscoring congenital dominance in early life. In contrast, adult cases are predominantly associated with pilonidal sinus disease, arising through follicular occlusion and recurrent hair entrapment, driven by local trauma, hormonal stimulation, and sedentary lifestyle [2].

Diagnosis also differs by age: pediatric fistulas require precise differentiation between congenital sinus tracts and acquired infections. MRI and fistulography have proven crucial in delineating fistula morphology in children, enabling accurate detection of epidermoid cysts and retrorectal extensions [3-4]. Consequently, age-tailored surgical planning is required to prevent recurrence and minimize functional damage. This study investigates patients treated at the Fergana branch of RRCEM to better characterize age-specific fistula features and treatment outcomes.

Methodology

This observational cross-sectional study included 28 patients treated for coccygeal fistula at the Fergana branch of RRCEM from 2022–2024. Patients were divided into three groups: infants (≤2 years), adolescents (12–18 years), and adults (18–45 years). Diagnosis was based on clinical examination, with MRI selectively used in suspected congenital cases. Management included conservative therapy for localized infant perianal abscesses and surgery for all other fistula types. Statistical analysis involved frequency distribution and chi-square comparison of recurrence rates.

Results

Among 28 patients, 11 (39.3%) were infants, 6 (21.4%) adolescents, and 11 (39.3%) adults. Congenital dermoid/epidermoid features were found in 8 of 11 pediatric cases (72.7%), whereas pilonidal sinus was diagnosed in 9 of 11 adults (81.8%). MRI was used in 7 pediatric patients, confirming congenital cystic remnants in 5 cases (71.4%).

Surgical treatment was performed in 22 patients (78.6%):

Pediatric surgical subgroup: 7 underwent laser thermotherapy or non-cutting seton placement. Recurrence occurred in 1 child (14.2%).

Adult surgical subgroup: modified Bascom or excision was used in 10 adults. Recurrence occurred in 2 adults (20%).

Conservative therapy was used in 6 infants with perianal abscess/fistula-in-ano, achieving remission in 5 (83.3%). Comparative recurrence rates were significantly lower in congenital cases with complete excision versus those without MRI-guided planning ($p < 0.05$). Overall postoperative infection occurred in 4 patients (14.3%), predominantly adults with wide excisional wounds.

Discussion

The predominance of congenital lesions in infants aligns with previous reports describing epidermoid or dermoid cyst-associated fistulas linked to defective ectodermal development [5]. Similarly, our data showed congenital morphology in 72.7% of pediatric cases, reinforcing embryological origins. Advanced imaging, particularly MRI, was validated in our cohort for detecting cystic remnants, consistent with reports advocating its use for complete anatomical delineation in pediatric surgery.

Adult coccygeal fistulas were largely attributable to pilonidal sinus disease, mirroring global epidemiological trends emphasizing follicular occlusion, recurrent trauma, and hair entrapment . Reduction of recurrence through modified Bascom techniques in our series parallels previously documented benefits of limited excision and lateral drainage procedures [6]. Additionally, our findings support a conservative approach in infants with perianal abscess, echoing high cure rates and reduced surgical need found in pediatric literature [7].

Conclusion

Coccygeal fistula characteristics differ significantly by age. Congenital anomalies predominate in children, whereas pilonidal sinus is common in adults. Minimally invasive surgery benefits pediatric

patients, while modified excision reduces adult recurrence. Conservative treatment remains effective primarily for infants with perianal abscess. Recommendations: 1. MRI should be selectively used in pediatric patients to guide total excision and prevent recurrence. 2. Conservative therapy should be prioritized for infant perianal abscess before surgical decision-making.

References:

1. O'G'LI, K. S. R. (2024). MODERN DIAGNOSTIC METHODS IN CHECKING PULMONOLOGICAL DISEASES. Ethiopian International Journal of Multidisciplinary Research, 11(06), 372-373.
2. Kenjayev, S., & Saidov, K. (2025). USING PRP IN THE TREATMENT OF ORTHOPEDIC DISEASES. International journal of medical sciences, 1(4), 209-211.
3. Kenjayev Sherzod Ravshan ugli. (2025). MANAGEMENT OF FRAGILITY FRACTURES IN THE ELDERLY: FROM PREVENTION TO SURGICAL INTERVENTION. International Multidisciplinary Journal for Research & Development, 12(05). Retrieved from https://www.ijmrd.in/index.php/imjrd/article/view/3301
4. Ravshan o'g'li, K. S., & Mavlonjon o'g'li, Q. J. (2024). Review Of The Use Of Tomosynthesis For The Diagnosis Of Injuries And Diseases Of The Musculoskeletal System. Frontiers in Health Informatics, 13(6).
5. Sadriddin, P., Akhtam, R., Mahbuba, A., Sherzod, K., Gulnora, R., Orif, N., ... & Olimjon, J. Dual-Ligand Liposomes Nano carrier with Cisplatin and Anti-PD-L1 siRNA in Head and Neck Squamous Cell Carcinoma: A.
6. Кенжаев, Ш. (2025). MANAGEMENT OF FRAGILITY FRACTURES IN THE ELDERLY: FROM PREVENTION TO SURGICAL INTERVENTION. Международный мультидисциплинарный журнал исследований и разработок, 1(4), 979-983.
7. Zarnigor, A. (2025). SUYAK ZICHLIGI KAMAYISHI: SABABLARI, KLINIK AHAMIYATI. Лучшие интеллектуальные исследования, 47(1), 224-235.