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Complicated Tailgut Cyst with Infection and Vaginal Fistulization in a 49-Year-Old Woman: MRI Contribution and the Role of CT-Guided Biopsy and Drainage

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Abstract: **Case Report**

Tailgut cyst, also known as retrorectal cystic hamartoma, is a rare congenital lesion arising from remnants of the post-anal gut and typically located in the retrorectal space [1, 2]. It predominantly affects adult women and may remain asymptomatic until complicated by infection, hemorrhage, fistulization, or, more rarely, malignant transformation [1, 3]. We report the case of a 49-year-old woman with no notable past medical history who presented with chronic proctologic symptoms. Digital rectal examination revealed extensive pararectal induration. Laboratory tests showed a white blood cell count of 10,000/mm3 and a C-reactive protein level of 9 mg/L, with no other remarkable abnormalities. Pelvic MRI demonstrated a multiloculated retro-anal cystic lesion extending into the retro-anal fat, showing heterogeneous signal intensity with fluid content, hemorrhagic foci hyperintense on T1-weighted imaging, and additional T2-hyperintense areas with diffusion restriction and peripheral enhancement, suggestive of abscessed changes with fistulization toward the vagina. CT-guided biopsy and drainage were performed using a 16G, 15 cm semi-automatic needle with a coaxial system. The patient was started on dual antibiotic therapy, and the first follow-up assessment was highly favorable. Additional surgical drainage was proposed. Histopathological results are pending. Overall, the clinicoradiologic presentation was primarily suggestive of a complicated tailgut cyst. This case highlights the key role of MRI in characterizing complicated retrorectal lesions and supports a multidisciplinary management strategy, while complete surgical excision remains the definitive treatment reported in the literature [1-4].

Keywords: Tailgut Cyst, Retrorectal Cystic Hamartoma, Retrorectal Space, Pelvic MRI, Vaginal Fistulization, CT-Guided Biopsy, CT-Guided Drainage, Infection.

INTRODUCTION

Retrorectal lesions are rare and heterogeneous and include congenital, inflammatory, neurogenic, osseous, and miscellaneous neoplasms or cystic formations [1, 4]. Tailgut cyst, also called retrorectal cystic hamartoma, results from incomplete involution of the embryonic tailgut [1, 2]. It occurs predominantly in adult women and may remain clinically silent for years, which often delays diagnosis [1, 4]. When symptomatic, presentation is non-specific and may include pelvic or perineal pain, constipation, rectal fullness, dyschezia, urinary or gynecologic symptoms, or septic complications [1, 4].

Pelvic MRI is the imaging modality of choice for lesion characterization, assessment of locoregional extension, and detection of complicated or suspicious features [1, 2, 5].

Tailgut cysts are usually uni- or multiloculated. Hyperintensity on T1-weighted imaging may reflect hemorrhagic, proteinaceous, or mucinous content, whereas wall thickening, septal irregularity, peripheral enhancement, or restricted diffusion may indicate superinfection or malignant change [2, 5]. Because recurrence, recurrent infection, and malignant transformation have all been reported, complete surgical excision is generally considered the reference treatment [1, 3, 4].

We report a case of a complicated tailgut cyst in a 49-year-old woman with infectious changes and vaginal fistulization managed initially by CT-guided biopsy and drainage plus dual antibiotic therapy.

Case Presentation

A 49-year-old woman with no notable past medical history presented with chronic proctologic symptoms. On digital rectal examination, extensive pararectal induration was noted. Laboratory evaluation showed a white blood cell count of 10,000/mm3 and a C-reactive protein level of 9 mg/L. The remainder of the laboratory work-up was unremarkable.

Pelvic MRI demonstrated a multiloculated retro-anal cystic lesion extending posteriorly into the retro-anal fat. The lesion showed heterogeneous signal intensity, including pure fluid content and hemorrhagic components hyperintense on T1-weighted imaging. Other areas were hyperintense on T2-weighted imaging with diffusion restriction and peripheral enhancement, consistent with abscessed changes fistulizing toward the vagina. Edematous thickening of the lower rectal wall was also described. No significant abnormality of the uterus, cervix, ovaries, or Douglas pouch was reported on the provided MRI report.

Given the presentation of a complicated retrorectal lesion, CT-guided biopsy and drainage were performed using a 16G, 15 cm semi-automatic needle with a coaxial system (Figure 1). The patient was started on dual antibiotic therapy. The first follow-up assessment was highly favorable. Additional surgical drainage was proposed because of the complicated nature of the lesion. Histopathological analysis is still pending. Taken together, the clinical, biological, and radiological findings were considered primarily suggestive of a complicated tailgut cyst.

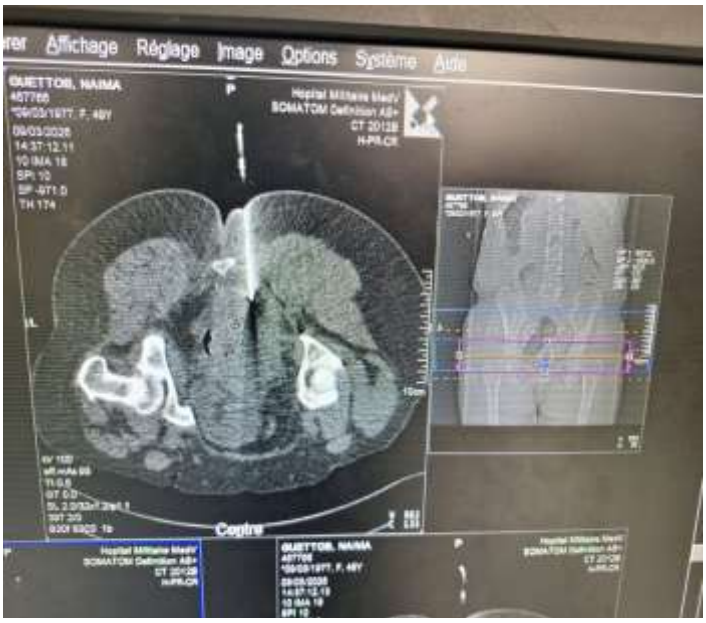

Figure 1: CT-guided drainage of a retrorectal collection complicating a tailgut cyst

DISCUSSION

Tailgut cyst is an uncommon congenital lesion of the retrorectal space. Contemporary reviews and surgical series confirm a marked female predominance and a broad clinical spectrum ranging from incidental discovery to infection, fistulization, compressive symptoms, or malignant transformation [1, 4]. In specialist series of retrorectal tumors, congenital lesions represent a major subgroup, and tailgut cysts are among the most frequent histologic diagnoses [4].

In the present case, several findings strongly supported the diagnosis: retro-anal/retrorectal location, multiloculated morphology, coexistence of fluid and hemorrhagic components, and evidence of

superinfection with diffusion restriction, peripheral enhancement, and vaginal fistulization. These findings are consistent with the MRI patterns described in the literature, where tailgut cysts are typically multicystic with variable signal characteristics depending on content and with more conspicuous wall abnormalities in complicated lesions [2, 5].

The differential diagnosis includes other retrorectal cystic lesions, especially epidermoid cysts, dermoid cysts, rectal duplication cysts, and complicated pelvic or perianal collections [1, 4]. In infected cases, the presentation may mimic an anorectal abscess or a complex fistula, thereby contributing to delayed diagnosis [1].

Therapeutically, the literature consistently supports complete excision as the definitive management of tailgut cysts [1, 3, 4]. This recommendation is justified by the risks of recurrence, persistent symptoms, repeated infection, and malignant transformation in residual tissue [1, 3]. Nicoll et al. emphasized that the malignant potential may be higher than previously assumed in the historical literature, reinforcing the rationale for complete resection when feasible [3].

The role of preoperative biopsy remains controversial. Several authors discourage routine biopsy or aspiration of typical retrorectal cystic lesions when the result is unlikely to alter management, because of the risks of infection, bleeding, and potential tumor seeding if malignancy is unsuspected [1, 4]. In the present observation, CT-guided biopsy and drainage should therefore be interpreted as a diagnostic and therapeutic step driven by the context of complicated infection rather than as a standard approach for all tailgut cysts. The favorable early response under drainage and dual antibiotic therapy supports the usefulness of initial septic control in selected complicated cases, while not replacing the need for definitive surgical treatment [1, 4].

CONCLUSION

Complicated tailgut cyst should be considered in any multiloculated retrorectal cystic mass in an adult woman, particularly in the presence of infectious or fistulous manifestations [1, 2]. MRI plays a central role in diagnostic orientation, assessment of locoregional extension, and therapeutic planning [1, 2, 5]. In our patient, imaging strongly suggested a complicated retrorectal lesion with abscess formation and vaginal fistulization, leading to CT-guided biopsy and drainage, followed by dual antibiotic therapy with a highly favorable initial follow-up. Complementary surgical drainage was proposed, while histopathological results remain pending. Definitive management usually relies on complete surgical excision, which remains the best safeguard against recurrence and potential malignant transformation [1, 3, 4].

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