ISSN : (Online): 1898-7249
Abbreviation: J Derm Cse Rep

Journal of Dermatological Case Reports

A rare presentation of an atypical dermoid sinus in the right infraclavicular region: A case report and review of the literature

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Abstract:

Background: Dermoid sinus disease typically arises from congenital inclusion of ectodermal elements and can occur in various anatomical locations. Infraclavicular dermoid sinus is exceedingly rare, with very few cases documented in the literature.
Case Presentation: A 7-year-old child presented with a recurrent, purulent discharge containing hair from the right infraclavicular region for one year. Clinical examination and imaging revealed a subcutaneous sinus tract extending from 3 cm below the right clavicle down to the infraclavicular area. Surgical excision of the entire tract was performed successfully, followed by primary closure. Histopathological examination confirmed the presence of hair shafts and chronic inflammatory changes consistent with a dermoid sinus. Postoperative recovery was uneventful, with no signs of recurrence at the six-month follow-up.
Conclusion: Atypical locations of dermoid sinus can pose diagnostic dilemmas and may be mistaken for other chronic sinus or abscess formations. Complete excision of the sinus tract is necessary to prevent recurrence. This case underscores the importance of including dermoid sinus in the differential diagnosis of persistent subcutaneous sinus tracts, even in uncommon sites.

Keywords:

Dermoid sinus; Infraclavicular region; Sinus tract; Chronic discharge; Case report

Introduction

Dermoid sinus disease is characterized by the presence of ectodermal elements—such as hair, sebaceous material, and skin appendages—within a cystic or sinus tract.1,2 While dermoid sinuses are more commonly described in certain well-known locations (e.g., sacrococcygeal area, scalp, or midline sites due to congenital fusion lines), they can occasionally present in atypical regions3-6 Infraclavicular dermoid sinus is extremely rare and can be misdiagnosed as a chronic abscess, infected sebaceous cyst, hidradenitis suppurativa, or

cutaneous tuberculosis sinus.5,7- This report details a 7-year-old child with a chronic, discharging sinus in the right infraclavicular region containing hair, ultimately diagnosed as an atypical dermoid sinus.

Case Presentation

A 7-year-old child presented with a one-year history of intermittent purulent discharge from the right infraclavicular area. The caregiver reported occasional swelling, localized pain, and the presence of hair strands protruding from the sinus opening. The child had no significant past medical or surgical history. On inspection, a small sinus opening (~5 mm) located ~3 cm below the right clavicle. (Figure 1) Hair shafts were visible at the orifice. Mild erythema surrounded the opening. A palpable tract reaching toward the collarbone and pain upon deep probing were seen. No fluctuance was noted in the adjacent subcutaneous tissue. The patient's vital sign were normal for the child's age: Temperature 37.2°C, Heart rate 90 bpm, Blood pressure 100/60 mmHg, Respiratory rate 18 breaths/min.

The Ultrasonography revealed a hypoechoic tract (~4 cm in length) in the subcutaneous tissue extending from just below the clavicle to the skin surface, with suspicion of embedded hair. The finding was further confirmed with MRI dictating a sinus tract confined to the subcutaneous plane with no deeper fascial or muscular involvement. Furthermore, the laboratory investigations showed normal blood chemistry profiles, mild leukocytosis (WBC 11,000 cells/µL), and mildly elevated ESR and CRP (Table 1).

The surgery was performed under general anesthesia, an elliptical incision (Figure) was made around the sinus opening. The sinus tract was carefully dissected along its entire length up to the inferior border of the right clavicle. All tracts and any offshoots were excised. During surgery it was observed that the tract contained hair shafts, keratinous debris, and evidence of chronic inflammation. No extension beyond the subcutaneous plane was observed. After thorough irrigation with antiseptic solution, the wound was closed primarily using interrupted non-absorbable sutures. (Figure) A small suction drain was placed if any dead space was present.

The excised mass was then sent for histopathological analysis that revealed hair shafts, keratinous debris, and granulation tissue with chronic inflammatory changes, confirming a dermoid sinus. No evidence of malignancy or granulomatous infection was noted.

The patient was discharged on the second postoperative day with instructions for daily wound inspection and dressing changes. Sutures were removed on postoperative day 10. At a six-month follow-up, the incision was completely healed, and there were no signs of recurrence.

Discussion

Dermoid sinus disease, although less common than other sinus pathologies, may present in various anatomical sites. When located in an atypical region such as the infraclavicular area, it can be confused with: (a)Chronic abscess or infected sebaceous cyst9; (b)Hidradenitis suppurativa10 ; (c) Cutaneous tuberculosis or atypical mycobacterial infection11; (d) Fistula from underlying osteomyelitis of the clavicle12-14 and (e) Foreign body granuloma. The differentiating features are enumerated in Table 2.

Several factors may contribute to the formation or persistence of a dermoid sinus, including congenital entrapment of ectodermal components and friction or irritation in the affected region.1 Imaging (ultrasound and MRI) is essential for delineating the extent of the sinus tract and ruling out deeper involvement.15

A complete surgical excision of the dermoid sinus tract remains the mainstay of treatment to prevent recurrence. Techniques may vary depending on the location and complexity of the lesion.1,2 In some cases, healing by secondary intention or flap-based closures are employed, but for this patient, primary closure was feasible and successful. Postoperative complications can like wound infection, dehiscence, or sinus recurrence have been reported. A close follow-up is vital to ensure proper wound healing and to catch any early signs of recurrence. In this case, the child's wound healed without complication, and there was no recurrence at six months.

This case illustrates an unusual presentation of a dermoid sinus in the right infraclavicular region in a 7-year-old child. Despite its rarity, clinicians must consider dermoid sinus in the differential diagnosis of persistent subcutaneous sinus tracts—particularly those containing hair—in less typical locations. Appropriate imaging and thorough surgical excision

are crucial for successful management and to minimize the risk of recurrence.

Take Home Message

- Dermoid sinus although rare in children can be seen

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- The presentation of Dermoid sinus in a atypical site like infraclavicular area should be excised completely and differentiated from chronic abscesses, infected sebaceous cysts, or other cutaneous infections.
- Appropriate screening and excision can minimize the risk of occurrenc

Figure 1 Legend: Location of the sinus area

Figure 2 Legend: *Intraoperative photo showing an elliptical incision around the sinus opening, exposing the tract containing hair shafts and keratinous debris.*

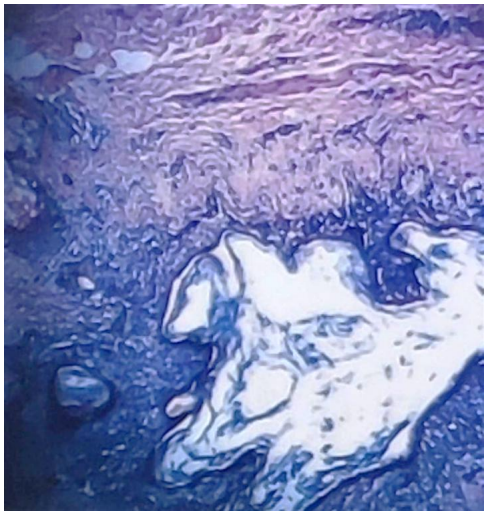

Figure 3 Legend: Histopathology slide displaying hair shafts, keratinous debris, and granulation tissue with chronic inflammatory changes typical of a pilonidal sinus.

Table 1: Blood biochemistry profile of patient

Investigation	Result	Reference Range
WBC (cells/µL)	11,000	4,000–10,000
Neutrophils (%)	68	40–70
Lymphocytes (%)	28	20–50
ESR (mm/hr)	20	<15
CRP (mg/L)	10	<5
Blood Glucose (mg/dL)	95	70–110

Table 2: Table enumerates the differential diagnosis of Dermoid Sinus

Condition	Typical Location	Key Clinical Features	Investigations
Dermoid Sinus	Varies; congenital ectodermal remnants	Hair shafts, keratinous debris, sinus tract	Ultrasound/MRI to define tract and contents
Sebaceous Cyst	Any region with sebaceous glands	Central punctum, may become infected	Ultrasound: cystic lesion
Hidradenitis Suppurativa	Axilla, groin, inframammary	Chronic inflammatory nodules, sinus tracts	Clinical diagnosis, supportive imaging
Cutaneous Tuberculosis	Commonly trunk, can be anywhere	Chronic sinus, possible systemic symptoms	Tuberculin skin test, PCR, biopsy
Osteomyelitis Fistula	Overlying infected bone	Deep sinus, bone involvement	X-ray/MRI for bone lesions, culture

References

1. Miller L, Tobias K. Dermoid sinuses: description, diagnosis, and treatment. COMPENDIUM ON CONTINUING EDUCATION FOR THE PRACTISING VETERINARIAN-NORTH AMERICAN EDITION-. 2003 Apr 1;25(4):295-301.
2. Wardinsky TD, Pagon RA, Kropp RJ, Hayden PW, Clarren SK. Nasal dermoid sinus cysts: association with intracranial extension and multiple malformations. The Cleft Palate-Craniofacial Journal. 1991 Jan;28(1):87-95.
3. Chintapatla S, Safarani N, Kumar S, Haboubi N. Sacrococcygeal pilonidal sinus: historical review, pathological insight and surgical options. Techniques in coloproctology. 2003 Apr;7:3-8.
4. Sorenson EP, Powel JE, Rozzelle CJ, Tubbs RS, Loukas M. Scalp dermoids: a review of their anatomy, diagnosis, and treatment. Child's Nervous System. 2013 Mar;29:375-80.
5. Ackerman LL, Menezes AH, Follett KA. Cervical and thoracic dermal sinus tracts: a case series and review of the literature. Pediatric neurosurgery. 2002 Aug 15;37(3):137-47.
6. Groff DB. Suprapublic dermoid sinus. Journal of pediatric surgery. 1993 Feb 1;28(2):242-3.
7. Alenezi M. Congenital dermoid sinus of anterior chest: Case report and review of literature. Int J Surg Case Rep. 2023
8. Sen AK, Saha AK. A Dermoid Cyst in the Right Axilla. Ind Med Gaz. 1940 May;75(5):286-288.
9. Shin HB, Park HS, Park EH, Jeong YJ. Congenital dermoid sinus of the anterior chest region. Pediatr Dermatol. 2021 Jan;38(1):132-136.
10. Wark KJ, Der Sarkissian SA, Tatian A, Woods J, Cains GD. The association between pilonidal sinus disease and hidradenitis suppurativa: a systematic review and meta-analysis. British Journal of Dermatology. 2023 May;188(5):673-5.
11. Franco-Paredes C, Marcos LA, Henao-Martínez AF, Rodríguez-Morales AJ, Villamil-Gómez WE, Gotuzzo E, Bonifaz A. Cutaneous mycobacterial infections. Clinical microbiology reviews. 2018 Dec 19;32(1):10-128.
12. Hong SW. Deep frontotemporal dermoid cyst presenting as a discharging sinus: a case report and review of literature. British journal of plastic surgery. 1998 Jan 1;51(3):255-7.
13. Goffin J, Plets C, Van Calenbergh F, Weyns F, Van Havenbergh T, Eeckels R, Casaer P, Hunninck K, Wilms G, Marchal G, Dejaegher L. Posterior fossa dermoid cyst associated with dermal fistula: report of 2 cases and review of the literature. Child's Nervous System. 1993 Jun;9:179-81.
14. Gerscovich EO, Greenspan A. Osteomyelitis of the clavicle: clinical, radiologic, and bacteriologic findings in ten patients. Skeletal radiology. 1994 Apr;23:205-10.
15. Buncke MJ, Lilly GL, Hamilton BE, MacArthur CJ. When is pre-operative imaging required for craniofacial dermoid cysts/sinuses? A review. Int J Pediatr Otorhinolaryngol. 2022 Apr;155:111090. doi: 10.1016/j.ijporl.2022.111090. Epub 2022 Feb 18. PMID: 35217269.