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Case Report

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Parotid Dermoid Cyst in a Child-A Case Report

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Abstract

Introduction: Dermoid cysts are extremely rare in the parotid gland, particularly in pediatric patients, and can present a diagnostic challenge. Only 4 pediatric cases were described in the literature to the best of our knowledge and our case report is considered the second youngest patient in the literature.

Clinical presentation: We add to the cohort of published cases an 8-year-old patient with a 2.4 cm dermoid cyst of the left superficial parotid gland that was totally excised. Our case report contributes to the discussion of diagnostic evaluation and treatment of a parotid gland dermoid cyst. Standard treatment includes a complete surgical excision because of the low but known risk of malignant transformation of head and neck dermoid cysts.

Conclusion: All clinicians should keep in mind this diagnosis and its high risk of malignant transformation in other sites although it's not have been described yet in the parotid gland.

Keywords: parotid gland; child; case report; parotidectomy

Introduction

There is controversy over the frequency of dermoid cysts in the head and neck area. Some authors report that they are common, whereas others say that only 7% of such cysts occur in the head and neck area. In either case, they are extremely rare in the parotid gland, particularly in pediatric patients, and due to this and the absence of pathognomonic findings, it is often difficult to diagnose pre operatively. The two words "dermoid cyst" are commonly used to describe epidermal, dermoid, and teratoid cysts of the head and neck. Parotid dermoid cyst must be differentiated from malignant tumors and other cystic lesions, and it should be completely excised due to the risk of malignant transformations. Yigit et al. presented a review of 17 cases of parotid gland dermoid cysts; only two patients were in the pediatric population [1]. In 2017, Glaas et al. presented an additional pediatric case of a 4-year-old female with a parotid dermoid cyst [2]. In 2021, Allison et al has described the case of a 17-year-old patient with dermoid cyst of the parotid gland [3]. Eventually and after a period of time, we couldn't find any cases reported in the literature until we add in 2023 our case report of an 8-year-old male patient with a 2.4 cm dermoid cyst of the left superficial parotid gland who was totally excised. Our patient's experience contributes to the discussion of appropriate diagnostic evaluation and treatment of the parotid gland dermoid cyst. "This manuscript was prepared following the CARE guidelines (https://www.care-statement.org)".

Case Report

An 8 years old male patient, with unremarkable previous medical history, was presented to our ENT department with 4 years' history of left parotid region swelling increasing gradually in size without any sign of facial palsy or lymph nodes. Physical examination revealed a healthy-appearing boy; weight was 60kg and height 154 cm, with a mobile and soft mass in the left parotid gland measuring approximatively 3.5 cm. There was no palpable lymphadenopathy. Cervical ultra-sonography had showed a well-defined mass on the left superficial parotid gland.

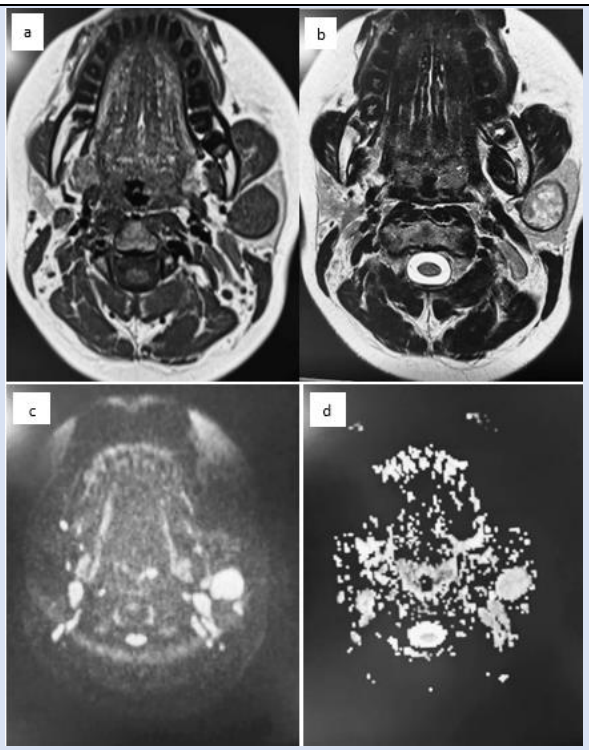

Figure 1: Facial MRI: axial section showing a mass of the left parotid gland measuring 24x21 mm, hyposignal on T1, hypersignal on T2 and diffusion with ADC coefficient of 0.8, surrounded by a peripheral capsula with a hyposignal on T1 and T2, as well as a peripheral enhancement after contrast injection. **a: T1/b: T2/c:Diffusion/d:ADC coefficient**

The facial MRI (figure 1) had revealed a tumor on the superficial part of the left parotid gland measuring 24x21 mm, hyposignal on T1, hypersignal on T2 and diffusion with ADC coefficient of 0.8, surrounded by a peripheral capsula with a hyposignal on T1 and T2, as well as a peripheral enhancement after contrast injection. Afterwards, the patient had undergone a left superficial parotidectomy. The facial nerve was preserved. The frozen section had revealed a dermoid cyst without any sign of malignancy.

Figure 2: image of the specimen (left superficial parotidectomy).

The histopathological examination of the specimen (figure 2) had confirmed the diagnosis with a complete excision of the cyst. There were no postoperative complications. Two days later, the patient was discharged. At follow up 10 months later, there was no evidence of local recurrence.

Discussion

Dermoid cysts are histologically benign lesions that can arise anywhere in the body and contain elements of the 2 germ layers, ectoderm and mesoderm, but not endoderm. By definition, dermoid cysts include the entrapment of epidermal and dermal elements within deeper tissue [4,5]. Often, the dermoid cyst lumen is

filled with sebaceous material and keratin debris, with occasional hair [6,7]. Dermoid cysts of the head and neck are typically found in the midline along the nasal dorsum, floor of mouth, or anterior neck. [8] It is the third most common location of dermoid cysts, accounting for 7%. The parotid region is a rare site with less than 25 cases reported in the English language literature. Only 4 pediatric cases were described in the literature to the best of our knowledge and our case report is considered the second youngest patient in the literature. Similar to other benign masses of the parotid gland, dermoid cysts present as slowly growing asymptomatic masses, unless they compress adjacent structures such as the facial nerve. There are no pathognomonic physical examination findings that can differentiate dermoid cysts from other diagnosis. Radiologic modalities (ultrasound, CT, and MRI) can help to visualize the contents of dermoid cysts, differentiating cystic and solid components and thereby narrowing down the differential possibilities. However, a definitive diagnosis can only be reached by histopathological evaluation [9]. Fat-fluid levels, a combination of homogenous material with fluid, otherwise known as a "sack of marbles" appearance, is a pathognomonic radiographic finding for a dermoid cyst [1], as well as are linear stripes within the cyst resembling hair. Imaging contributes to the patient evaluation but the rarity of this diagnosis adds the difficulty in discerning dermoid cysts from other parotid masses. Although FNAC is often performed preoperatively to provide a presumptive diagnosis, histopathological confirmation is still required after full excision of the lesion. Furthermore, FNAC may in fact provide a misdiagnosis or be non-diagnostic [10]. In our case report, MRI results presumed the lesion as a pleomorph adenoma without eliminating another malignant tumor as we have found an ADC coefficient at 0.8. some authors highlighted the importance of FNAC as a useful tool to the preoperative management of parotid dermoid cyst ((Bushra et al [7], Baschinsky et al [9], Islam et al [11]), thus others disagree. Our case like other cases reported by Gonzalez-Perez et al [5], Dwivedi et al [12], and Shakeel et al [13], found that preoperative FNAC is insignificant. Malignant transformation of dermoid cysts in other locations is well-documented. There are two reports of malignant transformation of head and neck dermoid cysts, originating in the sublingual and submental areas [14,15]. To the best of our knowledge there are no reports of malignant transformation of a parotid dermoid cyst in the literature. However, given the probability for malignant transformation, surgical resection of a parotid dermoid cyst is the recommended treatment of choice. It is essentially based on a superficial parotidectomy with extemporaneous examination and exicision of all the cyst with capsule intact unless the tumor is located on both superficial and deep lobe of parotid gland in this case a total parotidectomy is recommended.

Conclusion

Parotid dermoid cysts are rare entities, particularly in pediatric patients, and present a diagnostic challenge. Imaging modalities and cytopathology can assist in the evaluation but are rarely diagnosing a parotid dermoid cyst. All clinicians should keep in mind this diagnosis and its high risk of malignant transformation in other sites although it's not have been described yet in the parotid gland.

Declarations

Patient Consent

Consent to publish the case report was not obtained. This report does not contain any personal information that could lead to the identification of the patient.

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Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

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