A Rare Case of a Dermoid Cyst of Parotid Gland

Bushra Siddiqui¹, Shahbaz Habib Faridi², Syed Shamshad Ahmad¹, Roobina Khan¹

¹Department of Pathology, JN Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh, India
²Department of Surgery, JN Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

ABSTRACT

Dermoid cysts are benign lesions containing tissues of ectodermal and mesodermal germ layers. The incidence of dermoid cyst in head and neck region is only 7% while in parotid gland only 18 cases have been reported in the literature. An 18-year-old male presented with a slow growing, painless and soft swelling in the right pre-auricular region. According to the patient, he had this swelling since birth. Ultrasonography was suggestive of a 3X3 cm cystic lesion within the right parotid gland. Fine needle aspiration cytology (FNAC) showed predominantly anucleate squames and keratinous debris indicating towards the possibility of a dermoid cyst of parotid. The lesion was surgically excised with superficial parotidectomy, preserving the facial nerve. Histopathology confirmed the diagnosis. Post-operative period was uneventful and patient recovered well. Owing to the rarity of dermoid cysts in the head and neck region and more so within the parotid gland, this case is being reported here.

Keywords: parotid dermoid, superficial parotidectomy, histopathology

INTRODUCTION

A dermoid cyst (DC) is a result of the entrapment of epithelial cells along the embryonic lines of closure. It may be congenital or acquired and may contain ectodermal or mesodermal elements.[1] DC are uncommon in the head and neck region constituting only 7% of all such cysts throughout the body with 80% of all such cysts present within the head and neck regions with the body with 80% of all such cysts present within the orbital, oral, nasal or paranasal areas.[2] DC within the parotid gland is a very rare entity with only few reported cases throughout the literature.[4]

In the parotid gland it is most commonly seen above the pinna within a triangular area.[4] Although no age of predilection has been reported, intraparotid DC are very rare in children.[5] Clinically most of the patients are asymptomatic for long duration, alarmed only when the swelling increases in size considerably, when signs of compression set in or when the cyst ruptures spontaneously.[2] It may also be confused with inflammatory lesions like an intraparotid abscess, any other cyst or any neoplastic lesion of the parotid.[6] Unfortunately imaging studies and FNAC are rarely capable of diagnosing intraparotid DC correctly and they are usually diagnosed per-operatively with confirmation by histopathology.[2,4]

CASE PRESENTATION

An 18-year-old male patient presented with a painless swelling in the right pre-auricular region. The swelling was around 3X3 cm, round to ovoid in shape with no obvious signs of inflammation, any sinus or fistula. Patient told that it was present since birth and was slowly growing to achieve
the present size. There was no history suggestive of tuberculosis or ear infection. On palpation, it was non-tender, soft to firm in consistency and non-adherent to skin or underlying tissues. USG was pointing towards a cystic lesion in the superficial lobe of parotid. FNAC was done which yielded anucleate squames and keratinous debris leading to a possibility of a dermoid cyst within the parotid gland (Fig. 1).

Superficial parotidectomy was done taking care of the facial nerve and its branches. Grossly, the cyst was filled with pultaceous material and histopathological sections showed the cyst wall lined by stratified squamous epithelium with numerous sebaceous glands, fragments of hair shaft with surrounding inflammatory response, fragments of mature cartilage and fatty tissue along with congested blood vessels and chronic inflammation (Fig. 2a,b,c&d).

Hence, the diagnosis of dermoid cyst was confirmed. Post-operatively patient recovered well with intact facial nerve functions.
DISCUSSION

Dermoid cysts (DC) are formed when epithelial cells gets entrapped along the embryonal lines of closure and are different from epidermoid cysts by virtue of presence of dermal appendages like sebaceous glands or hair follicles within the cyst wall of DC and only an epidermal lining in the latter case.[2] DC are nothing but ectodermally differentiated mature teratomas which are benign and may contain few mesodermal elements also. Immature or malignant teratomas as the name suggests contain immature elements from all the three germ layers and are malignat teratomas as the name suggests contain immature elements from all the three germ layers and are predominantly solid while monodermal or highly specialised teratomas contain functional tissue like struma ovarii and carcinoïd.[3] The head and neck region is a rare site for DC (7% of all DC) and 80% of these cysts occur in the oral cavity particularly floor of the mouth or within the orbital, nasal/paranasal cavities. They are extremely rare within the parotid gland.[1-3]

DC may be classified as congenital, acquired or congenital inclusion type, last category being common in the cases of head and neck DC.[7] Congenital DC are exclusively seen within the testes or ovaries as they arise from the germinal epithelium.[3] Within the parotid gland acquired DC may be either due to repeated trauma leading to implantation of epithelial cells or it may be iatrogenic. Congenital inclusion type DC result from entrapped embryologic epithelium of the first and second branchial arches within the mesenchyme during the early weeks of embryogenesis.[1] Our case too probably belonged to the category of congenital inclusion type of DC since it was present since birth and showed ectodermal and mesodermal elements. For intraparotid DC there is no age of predilection, however it is extremely rare in pediatric patients. Tas et al reported a case of pediatric intra-parotid dermoid cyst which according to the authors is the only case of its kind.[5] Our patient was an 18 year old male who presented with a painless and slow growing swelling in the right pre-auricular region which according to the patient was present since birth. Likewise most of the patients of DC of parotid present with a cystic mass in any part of the parotid gland including the deep lobe but most commonly in a triangular area above the pinna.[2,4] Most of the times patients remain asymptomatic for long durations without any obvious or specific signs hence delaying the actual diagnosis.[2] Parotid dermoid cysts may be confused with a number of other benign conditions like abscess, mucocele, first branchial arch cyst, post traumatic cyst, lymphoepithelial cyst, parotid duct cyst, obstruction of parotid duct by calculi or parasite and also with neoplastic conditions like soft tissue tumours, lymphomas or benign and malignant tumours of the parotid gland itself.[1-3] Hence parotid DC are extremely difficult to diagnose just by clinical examination.[4] As far as the role of FNAC is concerned some authors find it an effective tool for pre-operative diagnosis of intraparotid dermoid cysts while some find it totally unhelpful.[1,2] In our case FNAC was helpful in pointing towards this rare diagnosis of DC because the smears were full of anucleate squames and keratinous debris. Imaging studies like USG, CT Scan and MRI are also not of much help as far as the correct pre-operative diagnosis is concerned.[8] However, they may be partially useful like USG may help in identifying solid and cystic lesions along with vascularity, CT Scan may tell bony details and MRI may rule out a lipoma.[2,3] In the present case USG was pointing towards a cystic lesion though definite diagnosis could not be made out. Only histopathology showing keratinizing stratified squamous lining along with appendages like pilosebaceous units or sweat glands is diagnostic of DC.[4] A DC is an encapsulated lesion and complete surgical removal of the cyst and capsule preserving the surrounding parotid tissue by a small face-lift incision may be enough according to some authors, while other authors insist that along with the cyst parotidectomy should be done.[2,4] In all the cases care must be taken to avoid injury to the facial nerve and part of the tumor may even be left unexcised if complete excision is compromising the facial nerve integrity.[2,3] Chances of malignant transformation of DC of the head and neck are very low and if at all it occurs it is in the form of squamous cell carcinoma in most of the cases.[1,2] In our patient, superficial parotidectomy with preservation of the facial nerve was done along with complete excision of the DC. Histopathology showed keratinizing stratified squamous epithelial lining along with sebaceous glands, fragments of hair shaft, cartilage and fatty tissue thus confirming the diagnosis of intra-parotid dermoid cyst.

What this study adds

1. What is known about this subject?
The incidence of dermoid cyst in head and neck region is only 7% while in parotid gland only 18 cases have been reported in the literature. They are ectodermally differentiated mature teratomas and may be acquired or congenital inclusion type of cysts

2. What new information is offered in this study?
Conservative surgery in the form of superficial parotidectomy is possible if the condition is diagnosed preoperatively with the help of Fine needle aspiration cytology like in our case. Histopathology is the ultimate diagnostic tool for making the diagnosis.

CONCLUSION

Intra-parotid dermoid cysts are very rare. They are ectodermally differentiated mature teratomas and may be acquired or congenital inclusion type of cysts. They rarely show malignant transformation. Clinically they are very difficult to diagnose and various diagnostic modalities like FNAC and imaging techniques may not be much helpful. Complete excision of the cyst and surrounding parotid tissue
is the main surgical approach while in some cases parotid may be spared and only cyst is excised by a small face-lift incision. Histopathology is the ultimate diagnostic tool.

REFERENCES

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