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RESEARCH ARTICLE

"RECURRENCE OF TRICHILEMMAL CYSTS ON THE SCALP: A CASE REPORT"

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Abstract

Background: Trichilemmal cysts, benign lesions originating from the outer root sheath of hair follicles, commonly present as asymptomatic nodules on the scalp. Despite their typically non-threatening nature, cases of recurrence and familial clustering underscore the need for a comprehensive understanding of their clinical course and potential genetic influences.

Case Presentation: We present a 44-year-old male with a lifelong history of trichilemmal cysts who sought surgical intervention due to discomfort caused by cyst formation on the scalp. Over a 15-year period, three cysts were surgically removed, with one inadvertently missing, leading to its progressive enlargement and the emergence of new cysts over the subsequent eight years. Magnetic resonance imaging revealed multiple well-defined cystic lesions with distinct margins, consistent with trichilemmal cysts. A second surgical procedure successfully excised all cysts, confirming the diagnosis through histopathological examination.

Conclusion: The presented case highlights the challenges in managing recurrent trichilemmal cysts and emphasizes the importance of comprehensive surgical intervention. The benign nature of the lesions was reaffirmed through negative histopathological findings for dysplasia or malignancy. The family history of similar cystic formations raises intriguing questions about potential genetic predispositions and shared environmental factors. This case contributes valuable insights into the clinical dynamics of trichilemmal cysts and prompts further exploration into their genetic underpinnings.

Introduction:-

Trichilemmal cysts, commonly known as pilar cysts, are benign cutaneous lesions originating from the outer root sheath of hair follicles [1–3]. Despite their generally non-threatening nature, these cysts can pose challenges in clinical management, particularly when they exhibit recurrent growth patterns and familial tendencies [4,5]. Trichilemmal cysts are typically asymptomatic, presenting as mobile, painless nodules on the scalp [6].

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The pathogenesis of trichilemmal cysts involves the accumulation of keratin within the hair follicle, resulting in the formation of cystic structures [7]. Although the precise etiology remains unclear, these cysts are generally considered non-malignant and are distinguishable from other cutaneous lesions by their characteristic features [8].

Clinical management of trichilemmal cysts primarily involves surgical excision, especially when the cysts become symptomatic or aesthetically bothersome to the patient [4,9]. Despite their benign nature, challenges may arise in cases of recurrence, necessitating a deeper exploration into the factors influencing their persistence.

This study delves into the intricate dynamics of trichilemmal cysts through the exploration of a compelling case involving a 44-year-old male patient. The patient's extensive history of pilar cysts, the complexities encountered during surgical intervention, and the subsequent recurrence patterns offer valuable insights into the clinical course of trichilemmal cysts, shedding light on their potential genetic underpinnings.

Case presentation:

A 44-year-old male patient with a lifelong history of pilar cysts sought medical attention at the outpatient clinic due to discomfort caused by cyst formation predominantly on his scalp, prompting a desire for surgical intervention. Over the course of 15 years, approximately three cysts had developed, all progressively enlarging. Surgical intervention was performed to remove all cysts, though regrettably, one was missed in the process. This overlooked cyst continued to enlarge progressively over the subsequent eight years, accompanied by the recurrence of new cysts in different sites and sizes.

Given the persistent growth in size of the lesions and the necessity for a tissue diagnosis, the patient underwent magnetic resonance imaging, revealing multiple well-defined cystic lesions with distinct margins and characteristic features consistent with trichilemmal cysts. The cysts were firm, painless, and no punctum. Subsequently, he underwent a second surgical procedure for the complete excision of the scalp masses, which was carried out without complications. Histopathological examination of the excised tissue, consisting of two pieces of grey tan cystic firm tissue, disclosed measurements of 1.4 x 1.2 x 0.9 cm for the largest cyst and 1 x 1 x 1 cm for the smallest one. The diagnosis confirmed a trichilemmal cyst and notably, the tissue was negative for dysplasia or malignancy. The patient was discharged in stable condition and remained well during the follow-up visit, showing no signs of recurrence of the scalp mass (Figure 1).

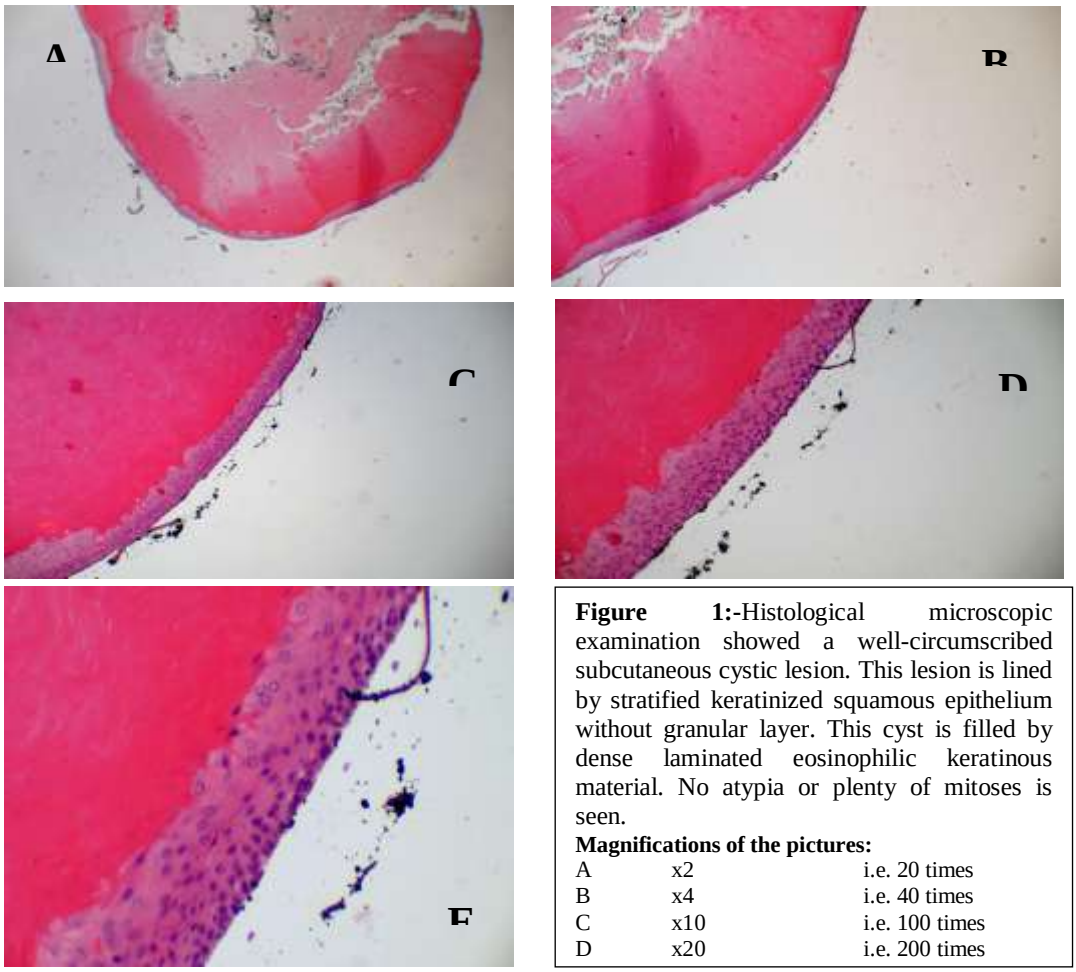

Figure 1:-Histological microscopic examination showed a well-circumscribed subcutaneous cystic lesion. This lesion is lined by stratified keratinized squamous epithelium without granular layer. This cyst is filled by dense laminated eosinophilic keratinous material. No atypia or plenty of mitoses is seen.

Magnifications of the pictures:

A	x2	i.e. 20 times
B	x4	i.e. 40 times
C	x10	i.e. 100 times
D	x20	i.e. 200 times

Apart from the two surgeries for cyst removal, the patient's surgical and medical history was unremarkable. He reported no other medications except for over-the-counter painkillers. In terms of family history, the patient recalled that his mother and aunt had experienced similar cysts on the scalp, although they did not seek surgical intervention. Additionally, there was a notable family history of type 1 diabetes mellitus (DM1) and hypertension (HTN).

Discussion:-

The presented case of a 44-year-old male with a longstanding history of pilar cysts on the scalp provides valuable insights into the recurrent nature of trichilemmal cysts and underscores the significance of thorough surgical intervention. The patient's history of three progressively enlarging cysts over 15 years, coupled with a missed cyst during initial surgical intervention, highlights the challenges in managing these dermatological conditions.

The decision for surgical removal was driven by the patient's discomfort due to the location of the cysts on the scalp. Patient's discomfort, pain, and location of the cysts was the main reasons for surgical preference among patients [10,11]. However, the recurrence of cysts over the subsequent eight years, including the missed one, emphasized the need for a more comprehensive approach to ensure complete excision. The utilization of magnetic resonance imaging (MRI) played a pivotal role in characterizing the lesions, revealing multiple well-defined cystic formations with distinct margins and characteristic features consistent with trichilemmal cysts [7].

The cysts, as observed during imaging and subsequent surgeries, were firm, painless, and lacked punctum, aligning with typical trichilemmal cyst characteristics [12,13]. This clinical presentation is consistent with the well-established nature of trichilemmal cysts, which are commonly benign and derived from the outer root sheath of hair follicles [14]. The absence of dysplasia or malignancy in the histopathological examination further supports the benign nature of the lesions.

The success of the second surgical procedure, leading to the complete excision of the scalp masses without complications, underscores the importance of meticulous surgical technique in managing trichilemmal cysts. The histopathological findings, detailing the measurements of the excised tissue, provide additional quantitative data to characterize the cysts accurately.

The family history of similar cystic formations on the scalp in the patient's mother and aunt raises intriguing questions about the potential genetic predisposition to trichilemmal cysts [15,16]. While the family members did not seek surgical intervention, this information adds a valuable dimension to the understanding of the genetic factors influencing the development of these cysts. Additionally, the notable family history of type 1 diabetes mellitus (DM1) and hypertension (HTN) introduces the possibility of shared genetic or environmental factors contributing to various health conditions within the family.

Considering the unremarkable surgical and medical history of the patient, aside from the cyst removal surgeries and the use of over-the-counter painkillers, the case suggests that trichilemmal cysts can be an isolated dermatological concern. However, the recurrence and familial clustering of these cysts prompt further exploration into the underlying genetic and environmental factors influencing their development.

In conclusion, this case highlights the challenges and complexities associated with the recurrent trichilemmal cysts on the scalp. The comprehensive approach involving clinical evaluation, imaging, and surgical intervention proved essential in managing the condition effectively. The findings contribute to the existing knowledge about the benign nature of trichilemmal cysts and suggest potential genetic influences. Further research into the genetic basis of trichilemmal cysts and their association with other health conditions may provide valuable insights for both clinical management and genetic counseling.

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