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### **An Unusual Finding In An Usual Cyst - A Case Report With Review of Literature.**

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#### **ABSTRACT**

Benign cystic lesions especially epidermoid cyst is a common condition of the skin. Secondary changes like ulceration, inflammation, rupture of the cyst with granulomatous reaction, etc. can occur in an epidermoid cyst. However, the presence of brown black pigment referred to as pigmented epidermal cyst with dense collection of melanin pigment is very unusual in an epidermoid cyst with only a few cases reported in the literature.

**KEY WORDS:** Brown black, melanin, foreign body giant cells, inflammation, granular layer.

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## **INTRODUCTION**

Epidermoid cyst is one of the commonest cutaneous cystic lesions, which is easy to diagnose clinically and histopathologically<sup>1</sup>. However, some unusual features in the commonly encountered benign cyst can pose certain confusion and diagnostic difficulty. This case report emphasis an unusual presence of a brown black pigment in an epidermoid cyst which was proved to be melanin on special stain and a diagnosis of pigmented epidermal cyst was rendered.

## **CASE HISTORY**

A 33 year old female presented with swelling in the chin since 2 years which was gradually increasing in size. On examination, a firm swelling of size 1x1cm seen in the left submandibular region. Excision biopsy was done. On gross, a cyst measuring 1.2cm in diameter was obtained, sectioning of which showed shaggy grey white pultaceous material. On histopathological examination, a cyst lined by stratified squamous epithelium with preserved granular layer displaying gradual keratinisation enclosing lamellated flakes of keratin was noted. The cystwall is partly lined by sheets of macrophages containing brown black pigment, which was also seen extracellularly. The pigment was removed by melanin bleach and negative for Prussian blue. Few multinucleated giant cells and cholesterol clefts were seen. Periphery of the tissue shows adipose tissue.

## **DISCUSSION**

The history of pigmented epidermoid cyst dates back to 1972 by Leyden et al<sup>2</sup>. Leyden et al. reported the presence of pigmented cyst in a patient with Haemochromatosis. Epidermoid cyst of the skin is a retention cyst that originates from the infundibulum of the hair sheath<sup>1</sup>. It is one of the most commonly encountered surgical case, clinically presenting as a swelling with punctum on the surface of the skin. Common sites of presentation includes the face, scalp, neck and trunk. Grossly it is characterised by the presence of a cyst with pultaceous material<sup>1</sup>. Histologically it is characterised by the presence of a cyst lined by stratified squamous epithelium with preserved granular layer displaying gradual keratinisation enclosing lamellated flakes of keratin. Ulceration, cholesterol clefts, inflammation, granuloma etc. can be seen as a secondary changes in an epidermoid cyst due to rupture of the cyst<sup>3</sup>. One unusual feature of epidermoid cyst is the presence of melanophages with abundant melanin which can sometimes lead to confusion in the diagnosis and the need to exclude other conditions both clinically and histologically like naevus or melanoma in association with epidermoid cyst<sup>4</sup>. Only very few cases with melanophagic proliferation has been described in literature. In a study

by David Fieselmann et al. amongst Negroes, 37% of the epidermal cysts were heavily pigmented<sup>5</sup>. A causal relationship between the pigmented (black) epidermoid cyst and haemochromatosis has also been proposed<sup>5</sup>. Large amount of pigment accumulation within epidermal cysts can occur after cyst rupture as reported by Shet et al<sup>6</sup>. Amongst 125 epidermal cysts from Indian patients, studied by Shet et al. 63% showed presence of melanin pigment or melanocytes to a variable extent. Vaideeswar et al. reported a case of ruptured epidermal cyst with exuberant melanophage proliferation and melanin pigment deposition<sup>7</sup>. One proposed hypothesis for the melanophagic proliferation could be due to chronic irritation of the epidermoid cyst, which can lead to increased production of melanin by melanocytes. Yet another reason behind the presence of pigment in the epidermoid cysts could be due to fact that epithelium of the cyst has qualities comparable to that of the infundibulum of hair follicle as it originates from it. Pigmented epidermal cyst should be differentiated from “pigmented follicular cyst”<sup>8</sup>. Pigmented follicular cysts shows prominent rete ridge pattern of epidermal lining and terminal sized pigmented hair shafts containing abundant melanin pigment within the cyst cavity.

## **CONCLUSION**

Though epidermoid cysts are common, presence of large amounts of melanin pigment in an epidermoid cyst warrants exclusion of co-existent naevus or malignant melanoma. Hence, pathologists must be aware of this entity.

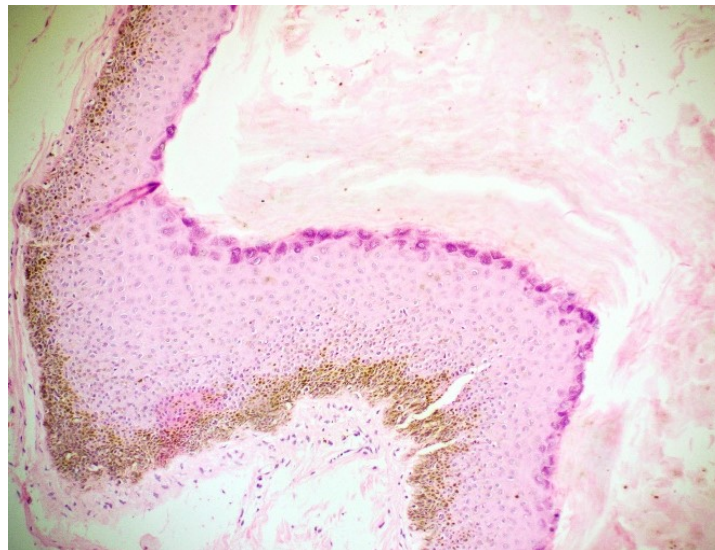


Fig 1: Cyst wall lined by stratified squamous epithelium with preserved granular layer.

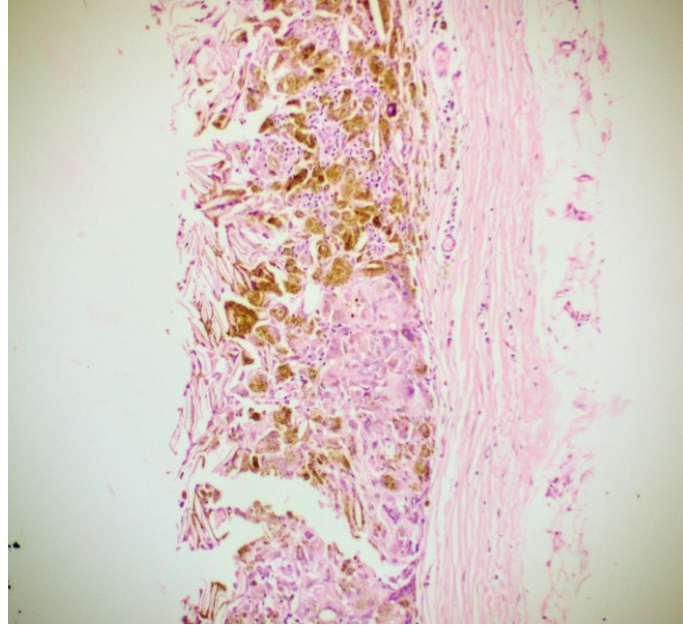


Fig 2: Cyst wall showing numerous brown pigment laden macrophages.

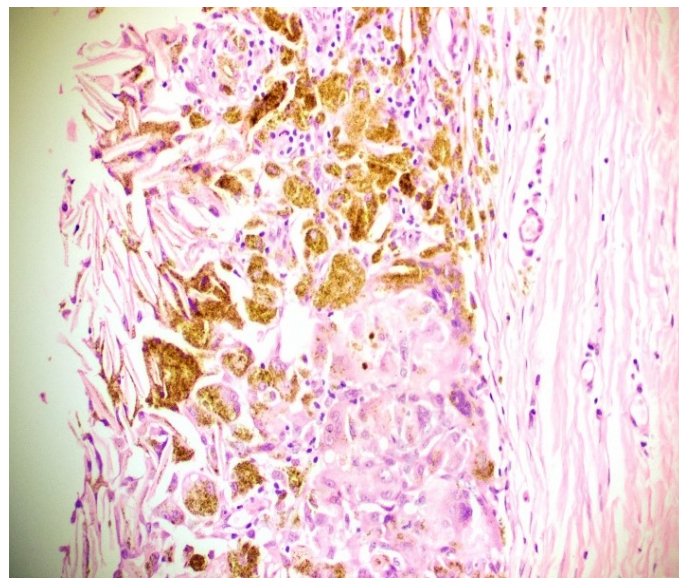


Fig 3: Cyst wall showing numerous brown pigment laden macrophages and cholesterol clefts.

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