An Atlas of Lumps and Bumps: Part 27

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Photo essay

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Volume 63 - Issue 5 - May 2023

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CITATION
Leung AKC, Barankin B, Lam JM, Leong KF. An atlas of lumps and bumps, part 27. *Consultant*. 2023;63(5):e10. doi:10.25270/con.2023.04.000005.

DISCLOSURES
Dr Leung is the series editor. He was not involved with the handling of this paper, which was sent out for independent external peer review.

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EDITOR'S NOTE
This article is part of a series describing and differentiating dermatologic lumps and bumps. To access previously published articles in the series, visit https://www.consultant360.com/resource-center/atlas-lumps-and-bumps.

Epidermoid Cyst

Epidermoidcyst, also known as epidermal inclusion cyst or epidermal cyst, or by the misnomer sebaceous cyst, is one of the most common cutaneous cysts.[1-3] The cyst is derived from the epidermal layer of the skin and is filled with keratin flakes or debris. Its wall

is composed of keratinized stratified squamous epithelium.[1,4]

Epidermoidcysts most commonly occur in the third and fourth decades of life.[5,6] The male to female ratio is approximately 2:1.[5,6]

Epidermoidcysts are benign and can be congenital or acquired. Congenital cases are uncommon and may be due to entrapment of ectodermal elements intradermally or subcutaneously during embryogenesis.[7,8] Acquired cysts may result from iatrogenic or traumatic implantation of epithelial cells into the dermal or subcutaneous layer or from obstruction of the pilosebaceous unit in the hair follicle.[8-10] Trauma is believed to be the main pathogenetic factor for acquired epidermoidcysts although many patients might not recall the event.[11] Exposure to ultraviolet light and medications (eg, vemurafenib, dabrafenib, and encorafenib; cyclosporine and imiquimod) have been implicated as causative factors.[1,6] Occasionally, they may occur as a result of a human papillomavirus (HPV) infection.[12,13]

Typically, an epidermoid cyst presents as a fluctuant to firm, dome-shaped, skin-colored cystic nodule that is attached to the skin but not attached to the underlying structure (Figure 1).[3,5,9] The nodule is usually movable.[5] A central punctum is often noted (Figure 2).[5]

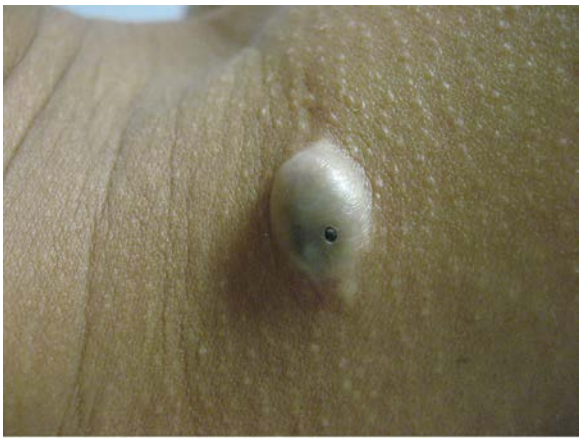

Figure 1. *An epidermoid cyst presents as a fluctuant to firm, dome-shaped, skin-colored cystic nodule.*

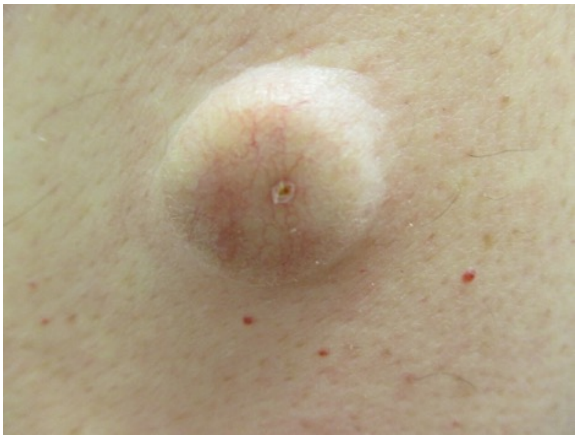

Figure 2. *A central punctum is seen here.*

An epidermoid cyst may remain stable or grow slowly over time.[1,2,5] It is usually asymptomatic unless it becomes infected, ruptures resulting in inflammation, or is large enough to affect adjacent structures through a mass effect.[4,11,14] An infected epidermoid cyst is often painful and appears erythematous (Figure 3).[5]

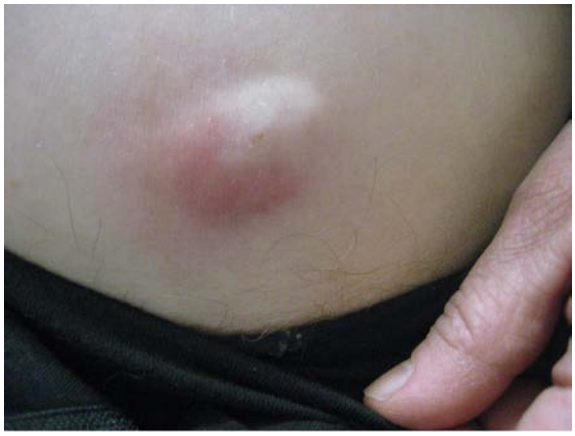

Figure 3. *An infected epidermoid cyst is pictured.*

Epidermoid cysts occur mainly on hair-bearing and sun-exposed areas.[3] Sites of predilection include the face, neck, scalp, and upper back.[2,8,15] Less commonly, they can be found on the limbs, nipple, and in the perineal and genital areas.[16-19] Rarely, epidermoid cysts occur on the buccal mucosa, or palms and soles where there are no hair follicles.[3,20,21]

Lesions are usually solitary, but uncommonly can be multiple.[22] Most epidermoid cysts are 0.5 to 5 cm in diameter and are unilocular.[2,23] Epidermoid cysts greater than 5 cm in diameter are considered "giant".[24-26] Multilocular lesions are more common in giant epidermoid cysts, are more commonly seen in elderly individuals, and have a higher risk of recurrence following treatment.[11,23,27]

The majority of epidermoid cysts are sporadic.[6] Certain hereditary syndromes such as Gorlin syndrome (basal cell nevus syndrome), Gardner syndrome (familial adenomatous polyposis), Favre-Racouchot syndrome (nodular elastosis with cysts and comedones), and Lowe syndrome (oculocerebrorenal syndrome) have epidermoid cysts as part of their constellation of features.[28,29] Multiple epidermoid cysts occurring before puberty especially in unusual locations such as the limbs should raise the suspicion of a syndrome.[6]

The diagnosis is mainly clinical, based on the appearance of a discrete, freely moveable cystic nodule that is attached to the skin but not the underlying structure, often with a visible central punctum. Typically, there is minimal to no surface change. Rarely, ultrasonography, computed tomography (CT) and magnetic resonance imaging (MRI) are performed to reveal the cystic nature of the mass and to differentiate it from other tumors.[24]

An epidermoidcyst may be cosmetically unsightly and socially embarrassing if it occurs in an exposed area.[7] The cyst may rupture spontaneously or as a result of trauma with discharge of a foul-smelling white-yellowish cheese-like keratinous material.[4,6,30] If the material is released, it may act as an irritant which may lead to a foreign-body giant cell reaction, granulomatous reaction, or granulation tissue formation which can be quite uncomfortable and mimic an infection.[4,31] Uncommonly, an epidermoid cyst will become secondarily infected which can result in cellulitis and abscess formation.[1] Rarely, squamous cell carcinoma (most common), basal cell carcinoma, Bowen disease, melanoma, Merkel cell carcinoma, and mycosis fungoides may develop in an epidermoid cyst.[32-38] The chance of malignant transformation to squamous cell carcinoma is approximately 1%.[17]

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