



Giant Epidermoid Cyst: A Case Report and Literature Review

Shafeez Shah Bin Kamal^{1*}, Sarmukh Singh¹, Azmi Hassan¹
and Norhidayah Jalani²

¹General Surgery Department, Hospital Sultan Haji Ahmad Shah, Temerloh, Pahang, Malaysia.

²Pathology Department, Hospital Sultan Haji Ahmad Shah, Temerloh, Pahang, Malaysia.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

Editor(s):

(1) Dr. Yasushi Shibata, University of Tsukuba, Japan.

(2) Dr. Asmaa Fathi Moustafa Hamouda, Jazan University, Saudi Arabia.

(3) Dr. Ashish Anand, GV Montgomery Veteran Affairs Medical Center, USA.

Reviewers:

(1) Rushani Samarakoon, Australia.

(2) Satish Deshmukh, India.

(3) Antonio Gligorievski, University Clinic of Surgery St. Naum Ohridski Skopje, North Macedonia.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/72566>

Case Study

Received 07 July 2021

Accepted 17 September 2021

Published 28 September 2021

ABSTRACT

Epidermoid cyst is a common benign tumour of the skin. Giant epidermoid cyst is rarely seen in this modern day due to improvements in healthcare system and health awareness amongst society. We would like to share a case report on our experience in successfully managing a patient with giant epidermoid cyst at an unusual location from the initial presentation up to the post operative follow up care. A 70 years old gentleman was referred from our primary healthcare clinic with complains of a huge swelling over the left gluteal region. Taking into account the clinical and radiological findings, he was planned for excision biopsy and surgery went smoothly without any complications. Intraoperatively there was 2 swellings with 600mls of cheesy content and the specimen was sent for histopathological (HPE) analysis. 2 vacuum drains were inserted intraoperatively. Radiological imaging modalities are of great value in managing these soft tissue lesions thus we have briefly described the advantage of each relevant imaging from a simple radiograph up to magnetic resonance imaging (MRI). We hope that this article will help clinicians differentiate benign from malignant tumours and have a schematic idea on the management soft tissue tumours mainly epidermoid cyst.

*Corresponding author: E-mail: shafeezkamal@gmail.com;

Keywords: Benign tumour; Epidermoid cyst; radiological findings; magnetic resonance imaging.

1. INTRODUCTION

Epidermoid cyst is a common benign tumour of the skin. Improvements of the healthcare system and health awareness has led to the infrequent encounters of large epidermoid cyst. We are reporting a case of giant epidermoid cyst at an unusual location that was successfully excised. We would also like to emphasize the need to differentiate a simple epidermoid cyst from a malignant soft tissue tumour as the management is different. It is of great importance for clinicians to know the differentiating features of a benign and a malignant soft tissue tumour as one may masquerade the other [1]. Any soft tissue lumps that are more than 5cm, showing sudden increase in size, deep seated and becoming painful should be considered malignant until proven otherwise [2] .

2. CASE REPORT

A 70 years old gentleman was referred from our primary healthcare clinic with complains of a huge swelling over the left gluteal region. Upon further history , he claims that the swelling has

been there for more than 15 years and has been gradually increasing in size. He never seek medical attention before as he was still able to do his daily chores despite having difficulties sitting and lying down. The swelling has started to become painful and was associated with fever thus bringing him to the hospital.

Upon examination he was alert, afebrile and hemodynamically stable. Local examination of the gluteal region showed a well circumscribed bosselated swelling measuring about 15x10cm over the left upper inner quadrant. It is firm to fluctuant in consistency and the overlying skin is warm and erythematous. There is a single punctum seen (Image 1). Systemic examinations were unremarkable.

In view of the huge size of the swelling, soft tissue ultrasound was done . A well defined homogenous echogenic mass that arise from subcutaneous tissue compressing the gluteal muscles. Some calcified areas seen within with no colour doppler signals seen (Image 2) . His blood parameters were all within normal limits except for mild leucocytosis of 16.6 .



Image. 1. Pre-operative image of the bosselated left gluteal lump

Taking into account the clinical and radiological findings, he was planned for excision biopsy and surgery went smoothly without any complications. Intraoperatively there was 2 swellings with 600mls of cheesy content and the specimen was sent for histopathological (HPE) analysis. 2 vacuum drains were inserted intraoperatively.

HPE report is suggestive of infected epidermoid cyst. Microscopically there is an intradermal cyst partly lined by keratinized stratified squamous epithelium with intact

granular layer. Laminated keratin is seen within the luminal surface and there marked infiltration of acute and chronic inflammatory cells within the dermis and surrounding cyst (Image 3). There was no evidence of dysplasia or malignancy.

Post operatively patient recovered well and was discharged after 2 days. He completed 10 days of antibiotics (ampicillin and salbactam). We reviewed the wound after 1 month post operation and noted it was well healed (Image 4).

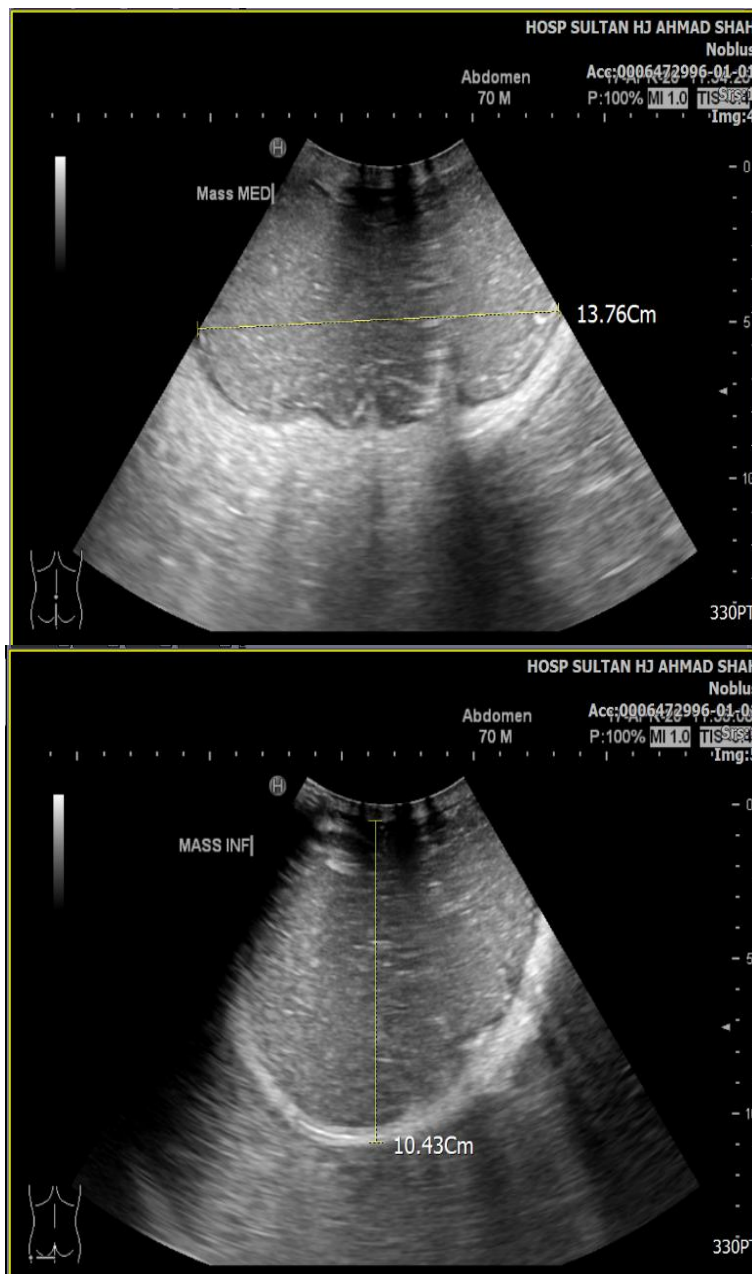


Image. 2. USG images showing well defined homogenous echogenic mass that arise from subcutaneous tissue compressing the gluteal muscles

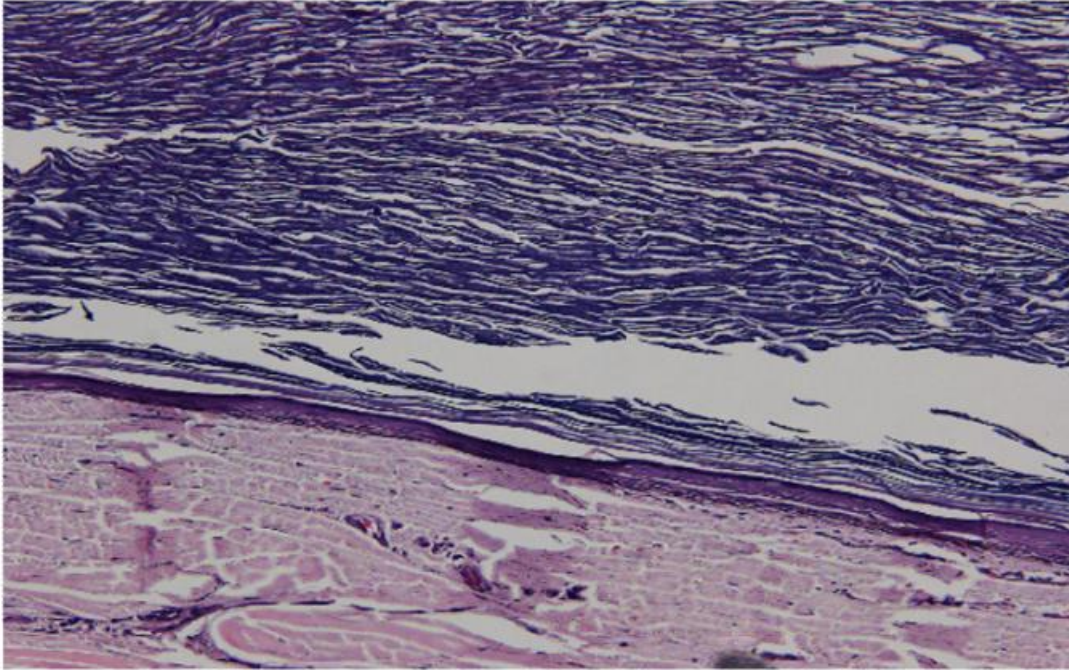


Image. 3. The cyst wall is lined by keratinized squamous epithelium with granular layer. Laminated keratin is seen within the luminal layer



Image. 4. Post operative 1 month showing well healed incision

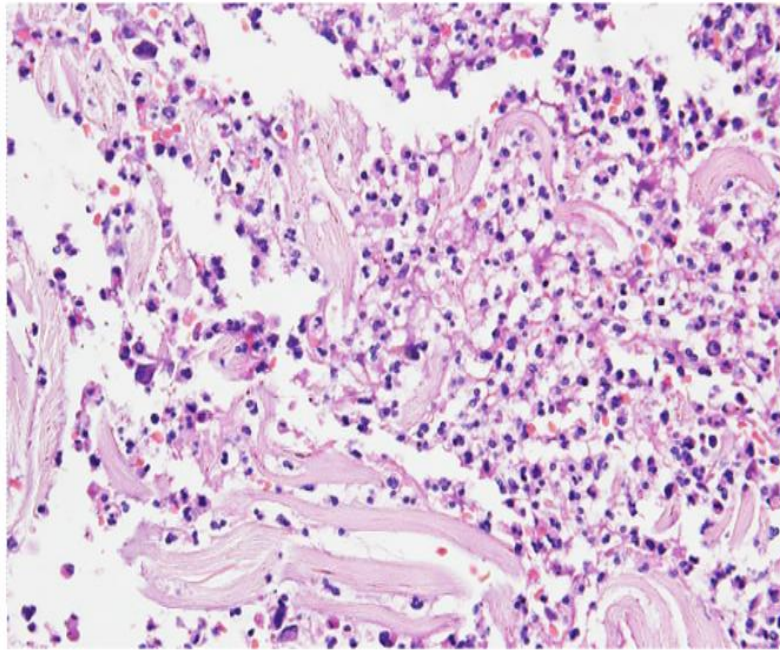


Image. 5. Collection of neutrophils forming microabscess with intermingled squames

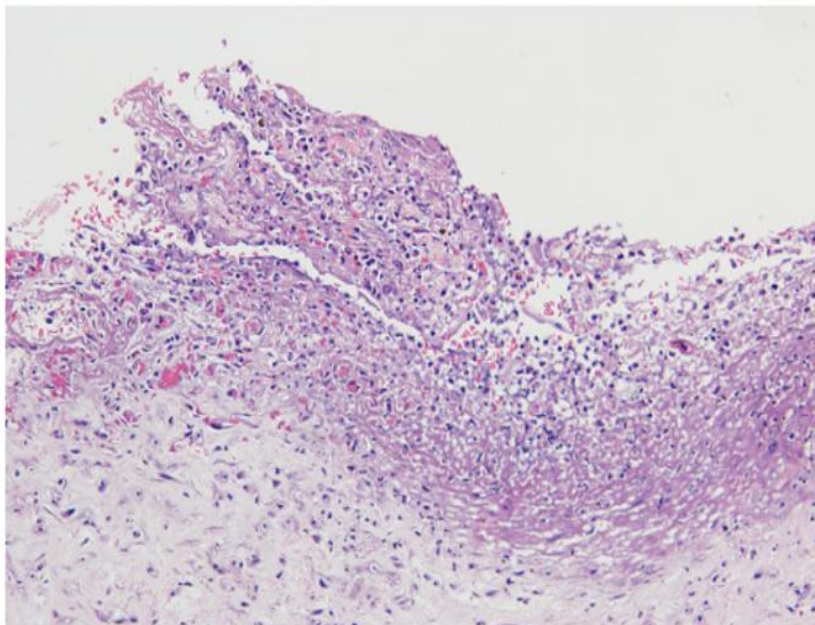


Image. 6. In area, the cyst lining epithelium is ulcerated with underlying granulation tissue formation

3. DISCUSSION AND CONCLUSION

Epidermoid cyst is a common benign tumour of the skin and is frequently found in young and middle aged adults. It is ubiquitous in nature, thus can be found anywhere but rarely in areas without hair, such as the palm and sole as it originates from the pilosebaceous apparatus [3].

Its size ranges from few millimetres to few centimetres. Due to improvement in health awareness, giant epidermoid cyst is rarely seen and its finding is often because of negligence rather than rarity [4].

By definition a cyst is a closed sac that has 2 main features which is a lining and contents that

are liquid or semisolid in nature . The terms epidermoid cyst and sebaceous cyst are often used interchangeably, however the term sebaceous cyst is a misnomer as this cyst does not arise from the sebaceous gland [5]. Epidermoid cyst often derived from follicular infundibulum and is formed by several factors such as sequestration of epidermal rest during embryonic life, occlusion of the pilosebaceous unit or traumatic implantation of the epithelial elements [6].

Clinically these cysts present as firm, skin coloured dermal nodules that are formed by cystic expansion of epidermal epithelium. They are filled with keratin debris giving rise to its cheesy appearance with a distinct odour. Sometimes these cyst may get infected causing pain and bogginess. Although these cysts are benign, few cases of malignant transformation to squamous cell carcinoma has been reported [7]. Misidentification of soft tissue sarcoma with simple epidermoid cysts is not unheard of, thus any soft tissue lumps that are more than 5cm, showing sudden increase in size, deep seated and/or becoming painful should be considered malignant until proven otherwise. Imaging and histological work up is of great paramount in these cases.

Diagnosis of simple epidermoid cyst is often clinical however in certain cases radiological imaging is indicated. Although radiographs are frequently unrewarding, they can provide valuable information when positive thus is often used as the first imaging modality in any soft tissue mass particularly in those involving the extremities [8]. Ultrasound (US) is the most widely used radiological modality as it is cheap and readily accessible. It confirms the presence of the mass, measures its dimensions and depth, evaluates its internal echotexture, vascularity, relation to surrounding structures and may also provides guidance for core-biopsy sampling. US images often shows a round to oval structure, well-circumscribed, avascular mass located in subcutaneous tissue along with phenomena of dorsal acoustic amplification and lateral shadowing [8,9]. In cases where malignancy is suspected Magnetic resonant imaging (MRI) is the imaging of choice as it provides vast and detailed information of the soft tissue structures with lack of ionizing radiation. On MRI, they have slightly hypointense signal intensity on T1-weighted and intermediate to high signal on T2-weighted. Restricted diffusion is typical of epidermoid cysts. These signs are useful in the differentiation of epidermal cysts from neoplastic

lesions [8,9]. MRI has largely replaced computed tomography (CT) for the evaluation of soft tissue tumors however there is still a role for CT in the evaluation of soft tissue masses in areas with complex osseous anatomy (eg : chest wall), since CT is the most effective modality for detailed evaluation of osseous architecture and in cases where MRI is contraindicated.

Surgery remains the primary treatment modality for epidermoid cyst. If clinical or radiological findings are suggestive of epidermoid cyst , excision is indicated and core biopsy is often not required. It is mandatory to remove the cyst as a whole along with its wall to prevent any recurrence. Proper management provides excellent prognosis in such cases.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Phillips H, Hogan P, Durica D, Pillai S, Mahon B, Lucero D, et al. Giant epidermal inclusion cyst masquerading as a soft tissue sarcoma [Internet]. *Journal of Pediatric Surgery Case Reports*. Elsevier; 2017. [cited 2021Aug22]. Available:<https://www.sciencedirect.com/science/article/pii/S2213576617302373>
2. Vodanovich DA, M Choong PF. Soft-tissue sarcomas [Internet]. *Indian journal of orthopaedics*. Medknow Publications & Media Pvt Ltd; 2018. [cited 2021Aug22]. Available:<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5791230/>
3. Gomi M, Naito K, Obayashi O. A large epidermoid cyst developing in the palm: A case report [Internet]. *International Journal of Surgery Case Reports*. Elsevier; 2013.

- [Cited 2021Aug15]. Available:<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3741460/>
4. Sharma R, Padhy B. Giant epidermoid cyst: A rarity or negligence? [Internet]. The Pan African medical journal. The African Field Epidemiology Network; 2018. [cited 2021Aug22]. Available:<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6295305/>
5. Mohamed Hafflah N, Mohd Kassim A, Hassan Shukur M. Giant epidermoid cyst of the thigh [Internet]. Malaysian orthopaedic journal. Malaysian Orthopaedic Association; 2011. [cited 2021Aug22]. Available:<https://www.ncbi.nlm.nih.gov/pubmed/25279030>
6. Kang S-G, Kim C-H, Cho H-K, Park M-Y, Lee Y-J, Cho M-K. Two cases of giant Epidermal Cyst occurring in the neck [Internet]. Annals of dermatology. Korean Dermatological Association; The Korean Society for Investigative Dermatology; 2011. [Cited 2021Aug22]. Available:<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3199411/>
7. Faltaus AA, Leigh EC, Ray P, Wolbert TT. A rare transformation OF EPIDERMOID Cyst INTO squamous Cell Carcinoma: A case report with literature review [Internet]. The American Journal of Case Reports. International Scientific Literature, Inc.; 2019 . [cited 2021Aug22]. Available:<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6690212/>
8. Patel DB, Jr GRM. Imaging of soft tissue sarcomas [Internet]. Chinese Clinical Oncology. AME Publishing Company; 2018 [cited 2021Aug22]. Available:<https://cco.amegroups.com/article/view/20927/20603>
9. Afonso PD, Mascarenhas VV. Imaging techniques for the diagnosis of soft tissue tumors: Rmi [Internet]. Reports in Medical Imaging. Dove Press; 2015. [cited 2021Aug22].

© 2021 Kamal et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/72566>