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Case Presentation

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An Unexpected Diagnosis: Well-Differentiated Cutaneous Squamous Cell Carcinoma Presenting as a Benign Sebaceous Cyst of the Scalp in an Elderly Male

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Abstract

Background: Cutaneous squamous cell carcinoma (cSCC) is a common malignant neoplasm of the skin, frequently appearing on sun-exposed areas in elderly individuals. However, its presentation can occasionally mimic benign dermal lesions, leading to diagnostic confusion and treatment delays.

Case report: An 86-year-old male presented with a slowly progressive, painless, mobile, non-ulcerated 2×2 cm swelling on the left frontoparietal region of the scalp. Based on classical clinical features, a provisional diagnosis of a benign sebaceous cyst was established. The lesion was managed with complete surgical excision under local anesthesia. Unexpectedly, subsequent histopathological examination revealed well-differentiated cutaneous squamous cell carcinoma with tumor-free peripheral and deep margins. The postoperative recovery was uneventful, with primary intention wound healing completed by postoperative day 10, after which the patient was seamlessly referred for formal oncological tracking.

Conclusion: This clinical case strongly demonstrates that benign-appearing scalp cysts in geriatric patients can harbor underlying skin malignancies. Routine histopathological examination of all excised focal lesions remains critical to prevent missing an unexpected diagnosis.

Keywords: Cutaneous squamous cell carcinoma; Sebaceous cyst; Scalp tumors; Malignant mimicry; Elderly dermatology; Histopathological evaluation

Introduction

Cutaneous Squamous Cell Carcinoma (cSCC) represents the second most frequent form of non-melanoma skin cancer worldwide, exhibiting a strong

correlation with advanced age and cumulative Ultraviolet (UV) radiation exposure. The head and neck regions, particularly the scalp, are high-incidence sites due to chronic sun exposure. While advanced cSCC typical presents with irregular, ulcerated, or hyperkeratotic plaques, early or well-differentiated forms may exhibit atypical, benign-appearing phenotypes. Sebaceous cysts, trichilemmal cysts, and lipomas constitute the vast majority of scalp swellings encountered in general surgical practice and are almost universally treated as routine benign pathologies. Nevertheless, malignancy can rarely masquerade as or coexist within these lesions. This case report delineates an unpredicted diagnosis of a well-differentiated cSCC that clinically simulated a completely benign sebaceous cyst on the frontoparietal scalp of an 86-year old man, underscoring the vital role of universal histopathology for all excised specimen cohorts.

Case Presentation

An 86-year-old male patient presented to the surgical outpatient clinic at Sub District Hospital Pakherpora with a history of a single, localized swelling on the left frontoparietal aspect of his scalp. The lesion had been slowly expanding over several months. On detailed clinical evaluation, the swelling measured approximately 2×2 cm in diameter. It was firm, mobile, completely non-ulcerated, and painless upon palpation, with no secondary discharge or surrounding erythema. No regional lymphadenopathy was detected in the cervical or submandibular chains, and the patient reported no constitutional symptoms such as unexplained weight loss or fever. Given the standard presentation profile—painless, smooth, and freely mobile dermal mass—a working clinical diagnosis of a benign sebaceous cyst was recorded. The patient was scheduled for elective local surgical excision. Under strict aseptic conditions and standard local anesthesia infiltration, a complete surgical excision of the mass was executed. Intraoperatively, the lesion appeared encapsulated but lacked the classic sebaceous core material, prompting cautious clearance with safe visual margins. The excised tissue specimen was fixed in 10% buffered formalin and dispatched for standard histopathological processing. The surgical wound site was closed primarily. Surprisingly, microsections stained with Hematoxylin and Eosin (H&E) revealed atypical squamous epithelial cells forming well-defined keratin pearls, confirming a diagnostic profile of well-differentiated cutaneous squamous cell carcinoma. Crucially, microscopic examination verified that both the deep and peripheral margins were completely tumor-free (clear margins). The patient's postoperative course was entirely smooth and uncomplicated. The surgical wound healed cleanly by primary intention, and the cutaneous sutures were safely extracted on postoperative day 10. Following the receipt of the unexpected malignant diagnosis report, the patient was immediately counseled and referred to a specialized tertiary oncology team for full systemic staging, metastatic workup, and close dermatological surveillance **(Figure 1-3)**.

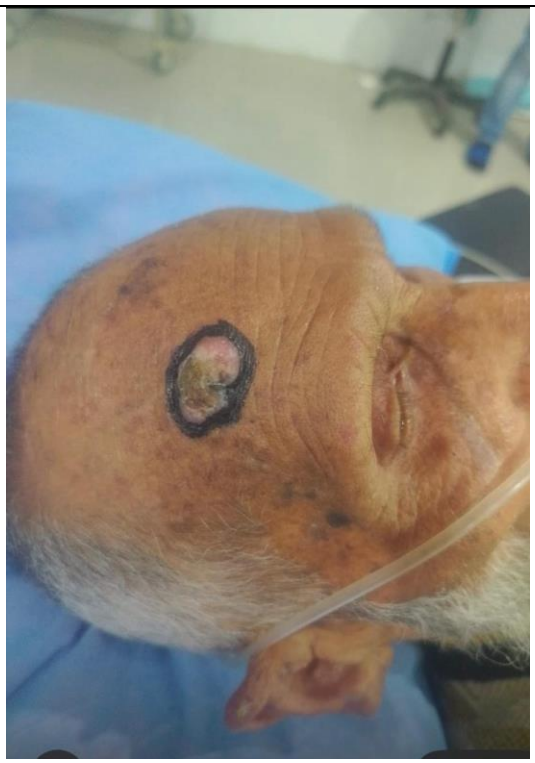

Figure 1: Preoperative clinical presentation. Photograph of the 86-year-old male patient showing a 2×2 cm firm, non-ulcerated, localized left frontoparietal scalp swelling, circumscribed with a surgical marker immediately prior to local anesthesia and intervention.

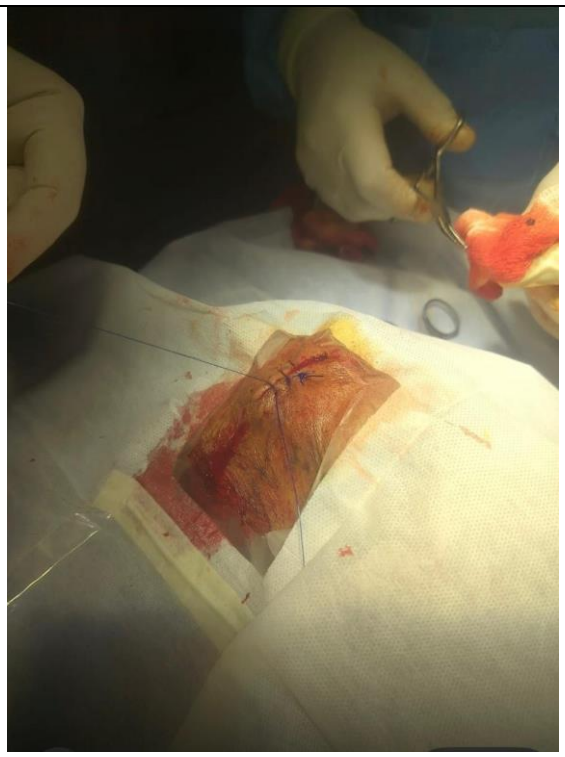

Figure 2: Intraoperative intervention. Perioperative photograph showing the localized surgical site following complete margins excision and neat execution of standard primary cutaneous suture closure.

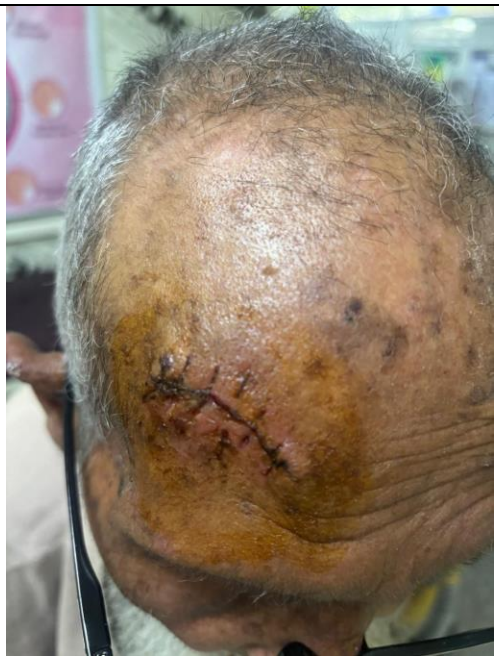

Figure 3: Postoperative evaluation. Clinical photograph obtained on postoperative day 10, demonstrating primary intention healing of the linear incision line on the scalp with clean margins, ready for suture removal.

Discussion

The clinical presentation of cSCC is highly variable. While classic lesions present as ulcerated nodules with indurated borders, well-differentiated forms can slow-grow beneath an intact dermis, occasionally mimicking the smooth, rounded contour of a benign cyst. In the geriatric population, age-associated dermal atrophy and chronic solar damage can alter the typical tissue reactive profiles, further confusing the clinical picture. This patient's lesion lacked any alarming features of malignancy—such as ulceration, fixation to underlying aponeurosis, rapid doubling time, or bleeding—thereby perfectly mimicking a benign sebaceous cyst. Misdiagnosing a malignant scalp lesion as a benign cyst can lead to highly unfavorable outcomes, including incomplete margin clearance, local recurrence, or perineural invasion. In this case, because a clean surgical excision technique was utilized, a complete resection with clear margins was successfully achieved despite the initial diagnostic misdirection. This case highlights a critical clinical pearl: clinicians must maintain a high index of suspicion when dealing with newly appearing or expanding scalp nodules in elderly patients, regardless of how benign they appear clinically. It firmly reinforces the universal surgical maxim that clinical diagnosis alone is insufficient, and histopathological analysis must remain mandatory for every single tissue specimen removed from the human body [1-4].

Conclusion

This case report illustrates an unusual clinical presentation of a well-differentiated cutaneous squamous cell carcinoma masquerading as a benign sebaceous cyst on the scalp of an 86-year-old male. It serves as a reminder that malignant skin lesions can mimic common benign entities in elderly patients. Routine histopathological evaluation of all excised skin and subcutaneous specimens is absolutely essential to ensure accurate diagnosis, ensure negative margin confirmation, and guide appropriate secondary oncological management.

Declarations

Ethics Approval and Consent to Participate: Institutional guidelines were strictly followed. Case reports are exempt from formal ethical committee review at our institution.

Patient Consent for Publication: Written, informed consent was obtained from the patient for the publication of this case report and any accompanying clinical images.

Availability of Data and Materials: All clinical data and medical records supporting the findings of this case report are safely archived within the hospital registration systems.

Competing Interests: The authors declare that they have no competing or financial conflicts of interest.

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Authors' Contributions: Dr. Maqsood Ali performed the surgical procedure, managed the clinical follow-up, and drafted the manuscript. Dr. Mustaq Ahmed Gagloo assisted in the surgical management, supervised the case analysis, and critically revised the manuscript text. All authors read and approved the final manuscript draft.

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