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Case Report

Squamous Cell Carcinoma Arising from a Chronic Lumbar Myelomeningocele: A Rare Presentation

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Abstract

Myelomeningocele is a congenital neural tube defect commonly managed in infancy to prevent serious complications. Malignant transformation of unrepaired lesions is exceedingly rare. We present a unique case of a 13-year-old boy from a rural Kenyan community with a chronic, untreated lumbar myelomeningocele that progressed to a squamous cell carcinoma (SCC). The patient exhibited a two-month history of cerebrospinal fluid leakage and a progressively ulcerating, fungating mass. Histopathological analysis confirmed a well-differentiated, keratinizing SCC with high-grade dysplasia. Surgical excision of the mass and repair of the myelomeningocele were performed successfully, with preserved neurological function postoperatively. This case underscores the importance of early surgical intervention, highlights the risks associated with neglected congenital anomalies, and calls attention to the urgent need for improved healthcare access and education in underserved regions.

Keywords: Myelomeningocele; Squamous Cell Carcinoma (SCC); Neural Tube Defect; Chronic Ulceration; Malignant Transformation; Keratinizing Carcinoma; High-Grade Dysplasia

Abbreviations

SCC: Squamous Cell Carcinoma; CSF: Cerebrospinal Fluid.

Introduction

Myelomeningocele, a form of spina bifida, is a neural tube defect typically managed surgically within the first few days of life to prevent complications such as infection, neurological deterioration, and CSF leakage [1]. In developing countries, however, barriers to early medical care often lead to delayed treatment or complete neglect [2]. Malignant transformation of such lesions is exceedingly rare but has been documented, most commonly involving squamous cell carcinoma [3].

This case is a rare presentation of SCC arising from a neglected lumbar myelomeningocele in a rural setting, emphasizing the need for early intervention and community education.

Case Presentation

A 13-year-old male from a rural community presented with a two-month history of clear fluid leakage from a pre-existing lumbar myelomeningocele. The lesion had been present since birth but had never been surgically repaired. Over the past few months, the skin overlying the lesion became ulcerated and evolved into a fungating, foul-smelling mass (Figure 1).

Pre-operative Examination

The pre-operative examination revealed that the lumbar myelomeningocele was situated in the lower lumbar region. The lesion exhibited signs of chronic ulceration, accompanied by overlying fungation. There was also persistent cerebrospinal fluid (CSF) leakage.

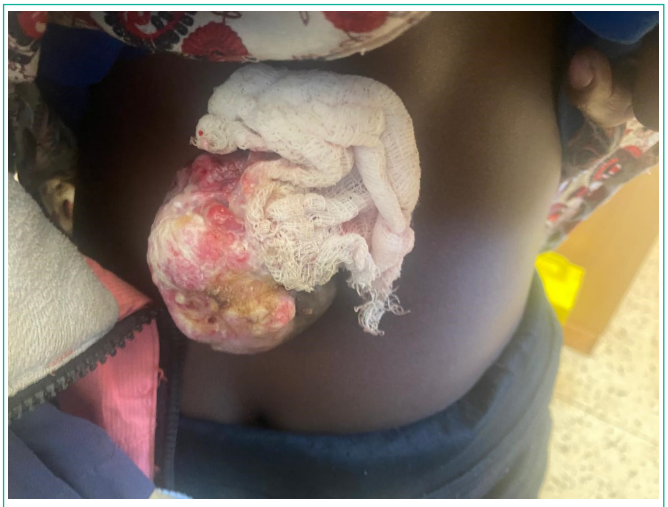

Figure 1:

Neurologically, the patient was alert and oriented to person, place, and time. Motor strength in both the upper and lower extremities was normal, graded at 5/5. Sensation remained intact, tone was normal, and physiological reflexes were within the expected range. The patient underwent a complete excision of the mass and repair of the myelomeningocele. Following the surgery, the lumbar incision was clean and dry, with sutures visible. The neurological exam remained intact post-operatively, and the wound healed fully without any signs of infection or neurological decline. The histopathological examination revealed a diagnosis of well-differentiated squamous cell carcinoma, keratinizing type, with high-grade dysplasia. The margins were found to be free of the disease.

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Discussion

Squamous cell carcinoma arising from a chronic untreated myelomeningocele is a rare clinical entity. Only a few cases have been reported in the literature [4]. Chronic irritation, ulceration, and repeated infections are believed to contribute to malignant transformation in such cases [5]. The absence of early surgical intervention and continued exposure to environmental insults increase this risk.

This case is noteworthy for several important reasons. First, it emphasizes the rare occurrence of malignant degeneration in myelomeningoceles. Additionally, it underscores the critical need for early surgical intervention and consistent follow-up care. Finally, it draws attention to the significant healthcare disparities in rural areas, particularly in developing countries, where access to specialized neurosurgical care remains limited.

Community education regarding congenital anomalies and the benefits of early surgical consultation is crucial. In rural and underserved regions, traditional beliefs and lack of healthcare access often delay life-saving interventions [6].

Conclusion

This case represents a rare but serious complication of an unrepaired congenital myelomeningocele. It serves as a strong reminder of the necessity for timely medical intervention and public health education in rural settings. Early recognition and treatment of neural tube defects can prevent such dire outcomes.

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