

A Case of Squamous Cell Carcinoma Arising from Chronic Osteomyelitis

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Abstract: *The incidence of SCC from chronic osteomyelitis is 0.2-1.7% [1, 2]. Here we report a cases of SCC arising from chronic osteomyelitis presented as non healing skin ulcer. In our case untreated fracture led to chronic osteomyelitis and sinus formation. It is evident that chronic irritation, repeated infection, and prolonged discharge from sinus tracts gradually triggered cellular changes, culminating into malignant transformation.*

Keywords: Chronic osteomyelitis, Squamous cell carcinoma, Malignant transformation, Amputation

1. Introduction

Squamous cell carcinoma is a malignant tumor but it is rare in chronic osteomyelitis. It is a rare and late complication developing 20 to 40 years after a chronic bone infection which involves skin or forms a fistula or sinus. Chronic irritation of the skin or soft tissue exposure to different growth factors play important role. Chronic osteomyelitis is characterized by inflammatory destruction and new bone formation in the intramedullary and periosteal areas of the affected bone. Skin sinus tracts form which persist for years with discharge. The long-term presence increases the risk of skin ulcers and malignant transformation of sinus.

2. Case History

A male patient aged 36 years old complains of ulcerated growth over medial aspect of left leg since 1 month. Patient had history of trauma and fracture of left leg 26years back. He has not taken any treatment after fracture for 10 years. Then he developed sinus with pus discharge since 16years from same site.

3. Gross

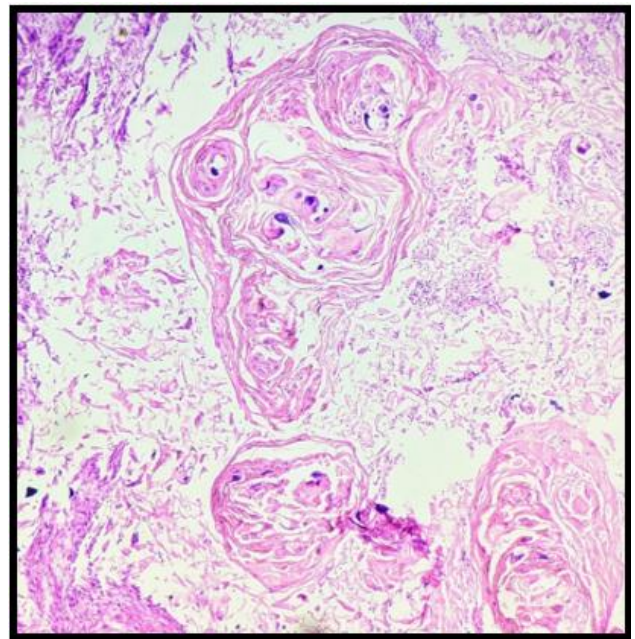
Received above knee amputation specimen of left leg measuring 40cms showing lesion on medial aspect of left leg. External surface shows ulcerated area measuring 17x16cms. Cut surface shows sinus extending into medullary cavity measuring 2.5x1cms

Gross Pictures



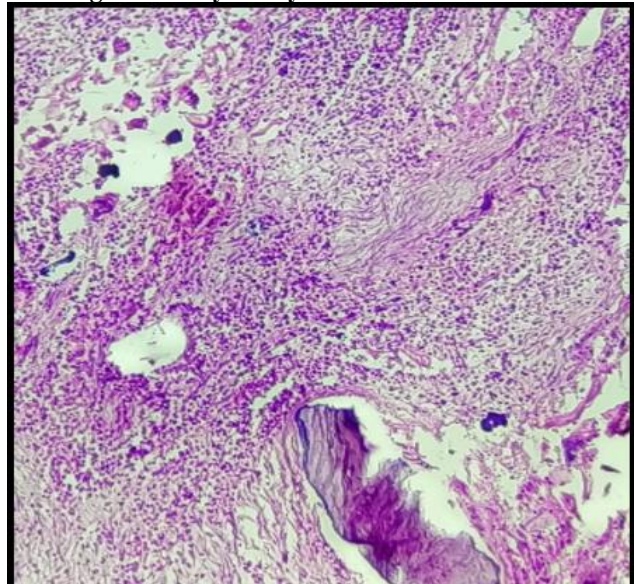


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H&E, 40x

Involving medullary cavity:

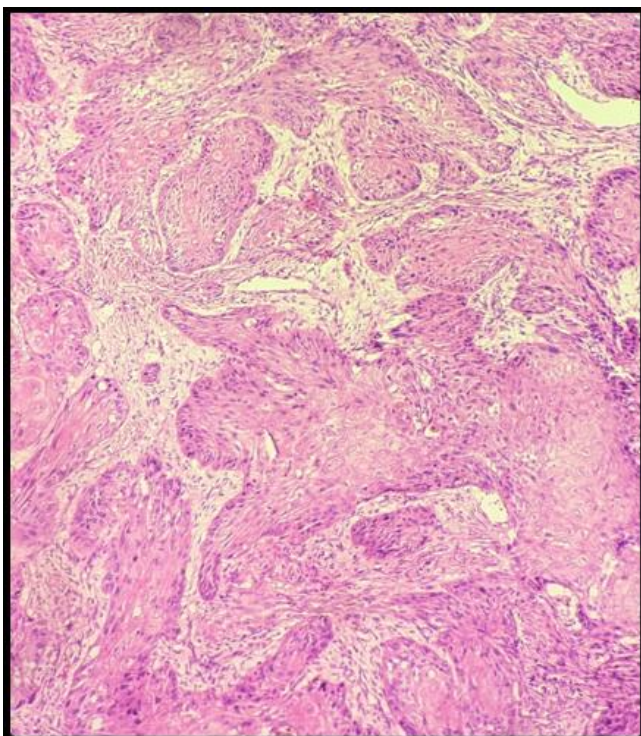


H&E, 10x

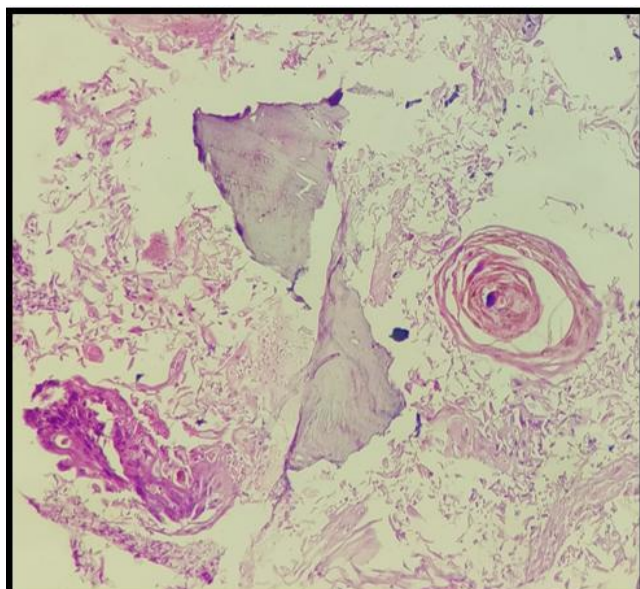
Microscopy:

Section studied show hyperplastic keratotic stratified squamous epithelium. Subepithelium shows malignant squamous epithelial islands with keratin pearl formation, invading bone upto medullary cavity with areas of necrosis and hemorrhage.

Microscopic Pictures



H&E, 4x



H&E, 10x

4. Discussion

The cause of osteomyelitis is fracture due to trauma. Tibia and femur are most common sites of osteomyelitis^[3, 4]. In our case untreated fracture at the age of 11 years is most likely cause of SCC in the background of osteomyelitis. Presence of sinus tract is essential for development of SCC. It is a rare and late complication developing 20 to 40 years after a chronic bone infection, in our case it developed after 26 years. It is seen after long bone infections. The malignant transformation include increased pain, foul smelling discharge from sinus, bone destruction which leads to erosion, and further leading to a mass on external surface of wound.^[5, 6, 7, 8, 9] The chronic presence of purulent discharge causes repeated degeneration and metaplasia of epithelized lining of sinus tract, which further leads to SCC. When the neoplasm invades the bone there is either osteolytic lesion or a pathological fracture. In our case there is a pathological fracture. Amputation is the best treatment of choice for carcinomatous transformations of chronic bone infection.^[6, 7, 8, 9] The prognosis is better for well differentiated squamous cell carcinoma when compared with the other histological types. In our case first a bone biopsy biopsy of left tibial mass was sent which was diagnosed as Well differentiated Squamous cell carcinoma and later Amputation was done. The malignant transformation most often results in squamous cell carcinoma and rarely in fibrosarcoma, osteosarcoma, reticulosarcoma, malignant fibrous histiocyctoma or angiosarcoma.^[10-14]

Differential Diagnosis:

- 1) Squamous cell Carcinoma Skin
- 2) Squamous cell Carcinoma Bone

5. Conclusion

Squamous cell carcinoma is the rare presentation in lower extremities following chronic osteomyelitis. Long duration of sinus formation, ulceration on external surface should raise a suspicion. Amputation was the definite treatment.

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