Case Report

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Basaloid Squamous Cell Carcinoma of Scalp From A Pre-Existing Cylindroma Metastasising To Brain: A Rare Case Report

Pathology Section

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ABSTRACT

Squamous cell carcinoma (SCC) is the second most common non-melanoma skin cancer and accounts for 90% of head and neck malignancies. Intracranial metastases of SCC are extremely rare. We are reporting a case of 55-year-old female with history of recurrent swelling over right side of forehead which was previously reported as cylindroma. CT scan of head revealed irregular lytic areas in right frontal bone suggestive of erosion. There were multiple small, rim enhancing lesions in bilateral parietal regions. Clinically it was diagnosed as malignant adnexal tumour. Wide excision of the lesion revealed features of invasive basaloid squamous cell carcinoma, probably a malignant transformation of the pre-existing cylindroma.

Keywords: Adnexal tumour, Brain metastasis, Non-melanoma skin malignancy

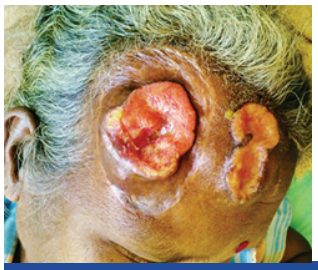
CASE REPORT

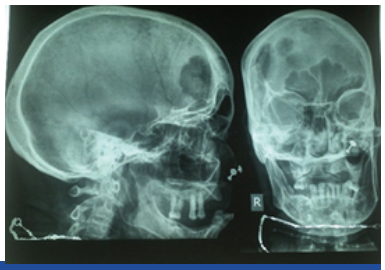
A 55-year-old female presented with ulcers over the forehead since eight months. She had noticed a small swelling ten months back, which had gradually increased to the present size of 6cm x 5cm, later ulcerated following trauma which was not healing. There was no clinical history which was suggestive of neurological manifestations. Thirty five years back patient had swelling on the same site which was completely excised and was histologically diagnosed as adnexal tumour cylindroma. She was a known diabetic and hypertensive on medication since 12 years. The biochemical investigations revealed elevated fasting blood glucose which was 260mg/dl. Other biochemical and haematological investigations were within the normal limits. Clinical examination revealed two ulceroproliferative lesions, largest measuring 6cm x 5cm and smaller measuring 4cm x 2cm respectively. They had everted margins with induration and base covered by healthy granulation tissue. The lesion was fixed to the underlying bone [Table/Fig-1]. Multiple enlarged lymph nodes were noted in right pre auricular and bilateral cervical group level II nodes in the neck. Skull X-ray showed multiple lytic lesions in the frontal bone [Table/Fig-2]. CT scan of head was done as there were lytic lesions in the frontal bone to rule out intracranial extension. CT scan revealed irregular lytic areas in the outer and inner table of the skull and heterogeneously enhancing soft tissue within the defect suggestive of erosion of the anterior aspect of right frontal bone. A large heterogeneously enhancing mass with central hypodense area in right frontal bone with compression of the frontal horn of ipsilateral lateral ventricle along with multiple small rim enhancing lesions in bilateral parietal regions was noted which was suggestive of metastasis [Table/Fig-3]. Wide excision specimen was received. A skin covered tissue with ulceroproliferative mass was received. Largest ulcer was measuring 6X5 cm and smaller measuring 4X2 cm. The margins were irregular, rolled out with granular reddish base.

Microscopy revealed skin tissue with epidermis showing infiltrating tumour. The tumour cells were round, polygonal to elongated and arranged in nests having a basaloid pattern showing peripheral palisading. Individual tumour cells were pleomorphic with large vesicular nuclear and moderate amount of eosinophilic cytoplasm. There was no evidence of benign cylindroma in the sections studied. Features were consistent with invasive basaloid SCC [Table/Fig-4]. The patient underwent Intensity Modulated Radiotherapy (IMRT) - 60 Gy/30 fraction/6 weeks and was advised follow up. There was no recurrence of the tumour in the scalp, however patient presented with left sided hemiplegia and was treated symptomatically during the follow up period.

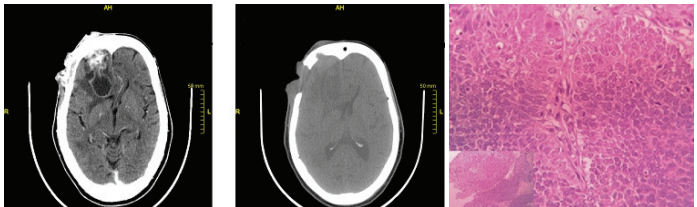
DISCUSSION

Cylindroma is a benign skin appendage tumour which is thought to have eccrine differentiation. They have a strong predilection for elderly females and are most frequently found in the scalp region [1]. Malignant transformation to squamous cell carcinoma from pre-existing benign cylindroma is very rare. It can arise both in solitary sporadic and in autosomal dominant multiple forms [2]. SCC is the second most common non-melanoma skin malignancy next to Basal Cell Carcinoma (BCC) [3]. It accounts for nearly 20% of non-melanoma skin cancer of the head and neck region [4]. The incidence of regional spread is more in SCC compared to BCC. SCC is a malignant neoplasm arising from the spinous layer of skin epithelium [3]. They present as ulcerative lesions which may develop in sun exposed areas to UVB radiation, pre-existing actinic keratosis, chronic skin ulcer or in a previous scar. Cylindromas are benign tumours arising from eccrine glands of skin. Malignant transformation of cylindroma is very rare. Clinically, features showing malignant transformation are rapid increase in growth, ulceration and pinkish discolouration of the nodules [5], microscopically





[Table/Fig-1]: Malignant ulcers over forehead. **[Table/Fig-2]:** X-ray showing lytic lesions in frontal bone.



[Table/Fig-3]: CT scan showing erosion of the frontal bone with underlying heterogeneously enhancing mass with central hypodense area in right frontal bone. **[Table/Fig-4]:** Tumour cells showing peripheral palisading arrangement (H&E X 400) Inset showing infiltrating basaloid squamous cell carcinoma (H&E X 100).

characterised by sheets of undifferentiated tumour cells showing high grade nuclear atypia with abundant eosinophilic cytoplasm also, atypical mitosis and individual cell necrosis. These tumours may have features of pure SCC or its variants [6]. Multiple histological subtypes of cutaneous SCC exist, which differs prognostically [7]. Histological variants include clear cell, signet ring, pigmented, basaloid, inflammatory, desmoplastic and rhabdoid type. The degree of anaplasia is used to grade the tumours [8]. Increased risk of metastasis is seen in cutaneous SCC arising in previously injured skin [9]. Though various published reports stress on the presence of benign adnexal tumour component to consider for malignant transformation in a benign adnexal tumour. There may not be a benign adnexal tumour component in a long standing tumour as seen in this case. Factors associated with risk of recurrence, metastases and death include location (ear, lip, anogenital, scars) of the tumour, size >2cm in diameter, depth of invasion >4mm or beyond subcutaneous fat, perineural invasion, poorly differentiated tumour, infiltrative or desmoplastic growth pattern and history of local recurrence [9]. SCC of the scalp with direct intracranial extension has been very rarely reported and can happen by intraosseous and intradural spread. The dura mater is a strong barrier for skin tumours which is known to prevent deep local invasion [10]. In this case, there was direct extension of SCC from the scalp along the cranial vault, dura and metastasising to the underlying brain. All reported cases had presented clinically as growing ulcerative lesions, which were neglected by patients which lead to distant metastases.

CONCLUSION

Early diagnosis and prompt surgical intervention is mandatory in SCC of the scalp, as they may invade vital structures and have distant metastasis. Surgical resection with pathological monitoring of clear margins remains the primary method of treatment for cutaneous SCC of the head and neck. However in case of local extension to the brain or distant metastasis adjuvant chemoradiotherapy is needed.

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