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AN AUTOPSY CASE OF CARDIAC METASTASIS FROM SQUAMOUS CELL CARCINOMA OF UNKNOWN PRIMARY.

Pathology

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ABSTRACT

Cardiac metastasis is rare.We here report a 60-year-old male in whom autopsy revealed a metastasis in the right cardiac ventricle from a well-differentiated squamous cell carcinoma (SCC) of unknown primary. The tumors in the myocardium was well-differentiated SCCs with keratinization and sporadic keratin pearls.

KEYWORDS

Cardiac metastasis, Squamous cell carcinoma.

I.Introduction

Squamous cell carcinoma (SCC) results from malignant growth of squamous epithelium and can metastasize; however, there are few published case reports of metastatic SCC to the heart. In the present study, we discuss an autopsy case of a metastasis from SCC to the heart.

II.Case Report

A 60-year-old male,a farmer, who presented in emergency with a syncopal episode, mild dyspnea and chest pain. His heart rate was 88 beats/min and his blood pressure was 90/48 mmHg normal heart sounds, clear lungs, and with no evidence of lower-extremity edema. An electrocardiogram showed sinus rhythm. Trop-T was mildly positive. Serum electrolytes were normal. A chest radiograph showed hilar adenopathy and no other abnormalities. 2D echocardiogram showed a small mass at the base of the right ventricle. The location of the cardiac mass precluded surgical resection. The patient's condition deteriorated acutely on day 5 of admission; he was managed conservatively and died the following day. An autopsy was performed to determine the cause of death.

III.Autopsy Findings

The heart weighed 260 g and contained a 3.1x2.5x1.2 cm white plate-like mass extending from the lateral aspect of the right ventricle and projecting into the right ventricular cavity and tricuspid valve. No myocardial necrosis, fibrosis, or any lesions other than the mass were observed on the cut surface of the myocardium. Histology showed the mass in the myocardium a well-differentiated SCCs with keratinization and sporadic keratin pearls. No significant gross or histological changes were noted in any other organs.

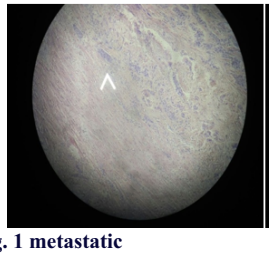

Fig. 1 metastatic differentiation(40x)

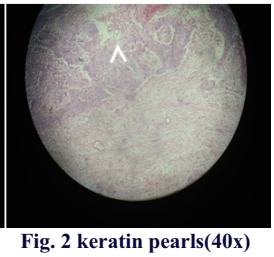

Fig. 2 keratin pearls(40x)

IV. Discussion

Cardiac metastasis from squamous cell carcinoma is highly unusual. The mechanism of metastasis to the myocardium is poorly understood. Pathways that have been postulated are haematogenous spread through the coronary arteries, direct contiguous extension, and retrograde dissemination through lymphatic channels. Involvement of the conduction system is much less common. In patients with cancer, cardiac metastases can be difficult to diagnose antemortem unless the patients are symptomatic. Usually the cardiac tumors are incidental findings and not the cause of symptoms. The mild elevation in their troponin levels was attributed to tumor extension into the myocardium, rather than to coronary occlusion. Treatment is therefore usually palliative and the prognosis is poor. Due to the extent and location of the intracardiac tumors, these patients are not candidates for surgical resection.

SCC results from malignant growth of epidermal (mucous membrane) keratinocytes; its component cells show variable squamous differentiation.[1] It arises from metaplastic squamous epithelium, such as in bronchus or uterine cervix, and is often preceded by scars or precancerous conditions. When originating in the skin, it characteristically presents as a hard nodule at a site exposed to light.[2] Histologically, keratinization of individual cells and keratin pearls are present in SCC. The amount of keratinization decreases with increasing malignancy and lack of differentiation. Distant cardiac metastases from primary cancers in organs relatively close to the heart, including the lung, esophagus, and breast, or as infiltrations from hematologic malignancies, have been reported.[3,4] The most common primary focus is reportedly the lung (36.4%). When malignant tumors metastasize to the heart, they primarily involve the pericardium and less commonly the endocardium or myocardium. According to Klatt et al. metastasis to the heart was observed in 10.7% of 1029 autopsy cases diagnosed with malignant tumors, 75.5% of which involved the pericardium. Metastasis of SCC to the heart was observed in only three cases in that series.[5] Prichard et al. have proposed that the following four factors are responsible for the rarity of metastasis to the heart: (i) the strong pumping action of the myocardium; (ii) the metabolic peculiarities of the myocardium; (iii) the fast blood flow within the heart; and (iv) lymph flow normally recedes from the heart.[6]

V. Conclusion

Though rare but, squamous cell carcinoma can metastasize to heart.

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