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LYMPHOEPITHELIOMA- LIKE CARCINOMA OF THE URINARY BLADDER ASSOCIATED WITH SCHISTOSOMIASIS: A CASE REPORT AND REVIEW OF LITERATURE

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Abstract

Lymphoepithelioma-like carcinoma is an undifferentiated carcinoma with histological features similar to undifferentiated, non-keratinizing carcinoma of the nasopharynx. Lymphoepithelioma-like carcinoma of the urinary bladder is uncommon with a reported incidence of 0.4% -1.3% of all bladder cancers. This case describes an 80 years old Egyptian male patient presented with recurrent hematuria and necroturia. Cystoscopy revealed a tumor involving the left lateral and the posterior wall of the urinary bladder.

The patient underwent transurethral resection of the bladder tumor. Pathological examination showed muscle invasive lymphoepithelioma-like carcinoma associated with schistosomiasis of the urinary bladder. To the best of our knowledge the association of schistosomiasis with lymphoepithelioma –like bladder cancer was not described in the literature before this case report
Key words: Egypt, Schistosomiasis, lymphoepithelioma-like, Urinary bladder carcinoma.

Introduction

The bladder cancer represents a significant health problem as one of the most common cancers. It is the fifth most common cancer in Western society (Jemal, *et al,* 2005; Bryan, 2011). In Egypt bladder cancer constitutes about 30% of all malignancies where it is the most common malignancy in men (Eissa *et al*, 2015) and the second most common malignancy in women after breast cancer (El Khouli *el al*, 2014). In industrial countries 90% of the diagnosed bladder cancer is transitional cell carcinomas and most of the investigators accepted the association between smoking and transitional cell carcinoma (Bulbul *et al*, 2005). In the Middle East and Egypt most of bladder cancer was squamous while in recent study the predominant lesion became a transitional cell carcinoma (65.8%), while that of squamous cell carcinoma dropped to 28.4% (Gouda, *et al,* 2007). This may be attributed to better preventive measures and effective early treatment of schistosomiasis on large scale. Associated bacterial and viral infections, cleavage of conjugated urinary carcinogens and production of nitrosamines by bacterial enzymes rather than only parasitic products, are suggested to be the main pathogenic factors (Mustafa, *et al,* 1999). Wishahi *et al*. (2014) reported that in schistosomiasis *haematobium* areas endemic, bladder cancer is the first cause of malignancy in men and fourth in women.

Urothelial carcinoma of the urinary bladder is classified into papillary and infiltrating types. Sharma *et al*. (2015) evaluated urinary bladder biopsies of the papillary urothelial neoplastic lesions based on 2004 WHO classification of urothelial neoplasms of the urinary bladder and found significant interob server variations regarding the final reporting of papillary urothelial neoplasm of low malignant potential (PUNLMP) and low-grade carcinoma and between low and high grade carcinomas.

Concerning infiltrating urothelial carcinoma, twelve variants were recognized. These variants include with squamous differentiation, with glandular differentiation and with the trophoblastic differentiation, nested, microcystic, micropapillary, lymphoepithelioma-like, lymphoma-like, plasmocytoid-like, sarcomatoid, giant cell and undifferentiated type (Ebele, *et al*, 2004). Lymphoepithelioma-like carcinoma of the urinary bladder

was first reported by Zuckerberg *et al.* (1991) as uncommon type, with a reported incidence between 0.4% and 1.3% of all bladder carcinomas.

Here, the present study reported an Egyptian case of a lymphoepithelioma-like carcinoma of the urinary bladder associated with schistosomiasis. The association of schistosomiasis with lymphoepithelioma-like bladder cancer was not previously reported.

Case report:

An 80 years old Egyptian male patient with a past history of schistosomiasis was presented by recurrent hematuria and necroturia. Cystoscopy revealed a mass involving the left lateral and posterior wall of the urinary bladder. CT scan revealed 4 x 3 cm mass involving the left lateral and posterior walls of the urinary bladder. There was no evidence of perivesical spread of the tumor or metastatic disease elsewhere. Total transurethral resection of the bladder tumor was attempted and 3.0 x 2.5 x 1.0 cm tissue fragments were received.

On microscopy, the tumor was composed of diffuse sheets and cords of undifferentiated non keratinizing epithelial cells having large pleomorphic vesicular nuclei with brisk mitotic figures and prominent nucleoli .The cytoplasm was moderate with poorly defined borders and the tumor tend to have syncytial growth pattern. The background showed dense lymphoplasmacytic infiltration with occasional eosinophils. Calcified *Schistosoma* ova were also seen (Fig. 1).

The tumor showed infiltration of the lamina and muscularis propria. There was no evidence of an in situ component in any of the examined areas. The entire tumor demonstrated similar morphology, without any associated component of conventional urothelial type carcinoma, or any other subtypes, such as squamous cell carcinoma or adenocarcinoma. The tumor cells showed membranous staining for pan cytokeratin (Fig. 2). The case was diagnosed muscle invasive lymphoepithelioma-like carcinoma associated with schistosomiasis of the urinary bladder.

Discussion

Generally speaking, Othman and Soliman (2015) in a review mentioned that schistosomiasis plagued the Egyptian population since the antiquity and still a public health problem, despite the tendency of being overlooked.

Schistosomiasis-associated bladder cancer is an extremely complex process resulting from the accumulation of many genetic and epigenetic changes leading to alterations in the cell proliferation regulation process. In bladder cancer, many of these carcinogenic cascades were not fully documented or somewhat conflicting (Zaghloul, 2012).

The lymphoepithelioma is a term used for describing an undifferentiated carcinoma of the nasopharynx, histologically characterized by the presence of prominent lymphoid aggregates in the background. Carcinomas with similar histologic features arising outside the nasopharynx are called lymphoepithelioma-like carcinoma (LELC), which was reported in various organs such as the thymus, salivary gland, and cervix. Involvement of the urinary bladder by this type of malignancy, first reported by Zuckerberg, *et al*., in 1991 is uncommon, with a reported incidence between 0.4% and 1.3% of all bladder carcinomas (Porcaro *et al*, 2003). The tumor can occur either in pure form or in association with conventional urothelial carcinoma (Amin *et al*, 1994). The pure form was considered to have a better prognosis and exhibits a good response to chemotherapy (Dinny *et al,* 1993; Amin, *et al,* 1996; Porcaro *et al,* 2003; Serrano *et al,* 2008).

The differential diagnosis includes malignant lymphoma, and in limited and crushed biopsies with marked chronic cystitis. The immunohistochemic studies (pan-cytokeratin) were useful in the resolution of these differential diagnoses. High-grade urothelial carcinoma of the usual type with a brisk inf

lammatory infiltrate should not be termed the lymphoepithelioma-like carcinoma simply because of the accompanying inflammatory cells (Amin, 2009). The syncytial arrangement and the typical cytological features are essential for the diagnosis of lymphoepithelioma-like carcinoma, which in its purest form may be treated differently than the usual or conventional invasive carcinoma

Conclusion

This study emphasizes the importance of this subtype of bladder cancer diagnosis, since its differentiation has prognostic and therapeutic implications.

Moreover, the association of the schistosomiasis with the lymphoepithelioma-like carcinoma of the urinary bladder which is not previously reported may have a role in the pathogenesis of this rare type of malignancy.

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Explanation of figures

Fig: 1: Lymphoepithelioma-like carcinoma of the urinary bladder associated with *Schistosoma* ova (H&E, x200).

Fig 2: Immunohistochemical stain for pancytokeratin, highlighting membranous staining of tumor cells (ABC, DAB Chromogen counter stained with Hematoxylin, x400)