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Inflammatory Myofibroblastic Tumor: A Short Review

Utkarsh Kumar*

*Department of Surgery, Kalpana Chawla Government Medical College, Karnal, Haryana, India.

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ABSTRACT

Inflammatory myofibroblastic tumor (IMT) is an unusual, benign solid tumor that most often affects children and young adults. Although its histopathologic nature is benign, it may not be differentiated from a malignant tumor because of its local invasiveness and its tendency to recur.

Keywords: Inflammatory Myofibroblastic Tumor, Histopathologic Nature, Malignant Tumor, Tendency

INTRODUCTION

Furthermore, it may present as a complicated mass resulting in diagnostic dilemma [1,2]. Although children constitute the majority of the cases of IMT, limited numbers of childhood cases have been reported in pediatric literature [3,4]. Additionally, recent reports concerning the malignant transformation of IMT and lymphoreticular malignancy arising in the residual IMT necessitate careful review of this entity [5-7]. Therefore, we present our experience with IMT and a review of the literature to delineate the clinicopathologic features of this rare entity with special emphasis on diagnosis and treatment.

REVIEW OF LITERATURE

Karnak et al. in 2001 concluded [8] that IMT is a benign neoplasm rarely presented with malignant features such as local invasiveness, recurrence, distant metastasis, or malignant transformation. Diagnosis of IMT preoperatively is difficult by clinical and radiological finding and histopathology is confirmatory. Complete surgical resection and close follow-up is necessary to prevent recurrences and complete treatment. The management of locally aggressive and recurrent forms should be decided on individual basis [8].

Dishop et al. in 2003 concluded that IMT is a tumor of low malignant potential that has limited clinical behavior but has the potential for aggressive local recurrence and even metastatic spread in a minority of cases. There is no well-defined management for malignant IMT. The successful outcome emphasizes the potential role of cisplatin, doxorubicin, and methotrexate as an adjunct to surgical resection, especially for locally recurrent malignant tumors that are not amenable for complete resection [9].

Chun et al. [10] found a mean age of 6 years (range, 11 months–14 years) in 8 IMT patients with female preponderance (M:F:1:3). Tumor location was lung (50% of patients), abdomen (25% of patients), lung and abdomen (one patient-12.5%), and abdomen, head, and neck (one patient-12.5%). Presenting symptoms included anemia, fever and dyspnea. Laboratory results included thrombocytosis, hypergammaglobulinemia, elevated sedimentation rate, and leukocytosis. Immunohistochemistry revealed ALK expression in four out of eight tumors. Four children had complete resection and are alive. Four patients had incomplete resection, and two had recurrences treated successfully with resection and radiotherapy; the other two died of disease. ALK expression was found in half the tumors. Prognosis was improved with ALK expression and complete surgical resection [10].

Kovach et al. [11] studied forty-four cases of pathologically confirmed IMT. Tumor locations included multiple anatomic sites. Therapies included complete resection, incomplete resection, observation, or chemotherapy, and/or radiation. Five patients underwent adjuvant chemotherapy and/or radiation therapy following surgery (14%) for local aggressiveness of the tumor, invasion, positive margins, or location of tumor that was not amenable to surgical resection. He concludes that Inflammatory myofibroblastic tumors may be a locally aggressive and destructive neoplasm. Tumor recurrence is unusual following complete surgical resection or organ-preserving combined modality

Corresponding author: Utkarsh Kumar, Assistant Professor, Department of Surgery, Kalpana Chawla Government Medical College, Karnal, Haryana, India, Tel: +919997502237; E-mail: utkarshkumar2009@gmail.com

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Therapy. Palaskar et al. [12] concluded that there was a strong positivity of vimentin and SMA in the spindle-shaped cells, while a focal faint positivity of ALK-1 was seen. Moreover, the absence of cytological atypia and nuclear hyperchromasia in the spindle-shaped cells prompted the diagnosis of IMT (lymphoplasmacytic variant). The lesion was surgically excised and there was no sign of recurrence after 6 months of follow-up.

Mirshemirani et al. [13] concluded that as the imaging and laboratory tests are non-specific, the diagnosis of IMT is rarely made before surgery. IMT should, therefore, be considered when a mass arises in an unusual location in the pediatric age group. Complete surgical resection should be performed whenever possible and the child should be kept on long-term follow-up.

Sinha et al. [14] concluded that Inflammatory myofibroblastic tumors are rare benign structures with unknown etiology. IMT occurs mainly in children and young adult. IMT in the pediatric abdomen have clinical importance because the lesion often mimic malignant neoplasm, such as sarcoma, lymphomas, or metastases.

Four basic histologic patterns are as follows:

a.) Dominant lymphoplasmacytic infiltrate

b.) Dominant lymphohistiocytic infiltrate

c.) Young and active myofibroblastic process

d.) Predominantly collagenized process with lymphocytic infiltrate.

Kumar et al. [15] conclude that abdominopelvic IMT is rare mesenchymal tumor, affecting mainly pediatrics group female, with unknown etiology. Surgery is the main stay treatment, but reoccurrence is very common. Proper knowledge regarding the tumor prevents the radical treatment and reduces morbidity and mortality [15].

CONCLUSION

From the above discussion we conclude that IMT is a rare pediatrics tumor affecting mainly female. It is benign in nature but have a malignant potential with high reoccurrence rate. Surgical excision is the curable treatment.

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