

SUBJECTIVE AND QUANTITATIVE EVALUATION OF BONE MARROW TREPHINE BIOPSY IN IDIOPATHIC MYELOFIBROSIS

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Abstract

Background: Idiopathic Myelofibrosis (IMF) is one of the myeloproliferative disorders in which various degrees of bone marrow fibrosis constitute the cardinal pathogenetic criteria for the disease therefore the study of bone marrow trephine biopsy is a major step in diagnosis .

Objectives: Are reticulin and iron stain are essential for the diagnosis and staging of idiopathic myelofibrosis

Methods: Trephine biopsies of 30 patients with IMF were reevaluated and the paraffin blocks were further sectioned, stained for H & E and reticulin and Perl's reaction. The patients were classified into four groups according to Cologne criteria for which both subjective and quantitative evaluations of trephine biopsies were performed.

Results: Both qualitative and quantitative evaluation was performed on trephine biopsies.

The most consistent finding with progression of diseases was megakaryocytic and granulocytic proliferation with preponderance of megakaryocytes. The study also proves that most patients showed an increase in the number of hemopoietic cells, reticulin fibers, trabecular bone width, osteoblastic index, blood vessels, and a reduction in the iron stores.

Conclusion: A thorough assessment of bone marrow biopsy including adequate tissue sampling stained for reticulin and iron stain are essential for the diagnosis and staging of idiopathic myelofibrosis.

Keywords: Idiopathic myelofibrosis, trephine biopsy, subjective, quantitative

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Introduction

Idiopathic myelofibrosis is an interesting myeloproliferative disease, which presents in middle aged and elderly people with signs and symptoms of anemia, splenomegaly, bone pain and hypermetabolic state with a leucoerythroblastic blood picture, teardrop cells and varying degree of bone marrow fibrosis^[1,2].

The principal pathogenetic criteria are an abnormal megakaryocyte resulting from an abnormal neoplastic stem cell. The death of these abnormal megakaryocytes results in the production of mitogens that result in bone marrow fibrosis^[3-7].

The aspiration of bone marrow in IMF patient usually yields dry tap or unsatisfactory marrow is collected^[3,4,8]. Therefore, trephine biopsy is essential for diagnosis, which shows an increase in reticulin fiber density and thickness^[3,4,10].

The diagnosis and staging of IMF is based on the Cologne Criteria^[11,12] and because of the prognostic significance of the histopathological features of IMF, this study

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