Short report

Endomyocardial biopsy: a 21st century diagnostic tool

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The question of the utility of Endomyocardial Biopsy (EMB) often and recurrently raises.

It is claimed that the image techniques provide identical results without the risks of an invasive procedure. It is a fact that the impressive technico-scientific development of cardiovascular imagological methodologies covers a broad spectrum of diagnosis. It is also a fact that endomyocardial biopsy is not completely risk-free. Yet, when performed by experienced professionals in reference centres, endomyocardial biopsies may disclose a final unexpected nosologic entity, confirm or exclude a proposed diagnosis and, even when not showing specific lesions in the examined samples, EMB may point to a multifocal involvement of the heart that eventually skipped the fragments collected [1, 2, 3].

Thus, it has a unique diagnostic value, as in post-cardiac transplant monitoring (Fig. 1A, B) [4, 5], myocarditis (Fig. 1C) [6, 7], cardiomyopathies, namely infiltrative (Fig. 1D-F) [8, 9], onco-cardiology (Fig. 1G, H) [10], among other pathological settings.

This letter aims to emphasize the up-to-date relevance of Endomyocardial Biopsy in the clinical cardiological workflow.

The authors declare no conflict of interest.

References


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Fig. 1. EMB and Heart Transplantation: A) Microscopic image of cardiac graft sample, stained with haematoxylin-eosin (HE, ×100), showing interstitial oedema, linfo-histiocytic inflammatory infiltrate, which focally destroy myocytes, as in acute cellular rejection. B) A detail from the former sample immunomarked with C4d, revealing positivity in more than 50% of intra-myocardial small vessels, and thus acute humoral rejection (C4d, ×200). C) EMB and Myocarditis – Histopathological view of myocardium with interstitial oedema, mixed inflammatory infiltrate (including mononuclear cells and polymorphonuclear neutrophils) and myocardial lesion, namely by the presence of intra-cellular microorganisms (►) stained with the special technique Giemsa (Giemsa, ×100), as in Toxoplasmosis. D, E, F) EMB and cardiomyopaties – Microscopic sections showing myocardial compression, distortion and replacement by extra-cellular amorphous deposits (⁎), stained with haematoxylin-eosin (HE ×100) (D), with the special technique Congo Red (Congo Red ×100) acquiring red colour (E) and the latter observed under polarized light, which displays green-apple bi-refringence (F), as documented in infiltrative/restrictive cardiomyopathy due to amyloid. G, H) EMB and onco-cardiopathology – G) Microscopic images of endomyocardial samples stained with haematoxylin-eosin (HE ×40), some of which are densely occupied by neoplastic lymphoid cells (◄), diffusely positive (in brown) for B cells immunomarker CD20 (CD20 ×100) (H), as in diffuse large B cell non-hodgkin lymphoma.