Short communication

Iris abscess after bacterial endocarditis in a patient with leukaemia. Differential diagnosis

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A B S T R A C T

Purpose: To report a case of iris abscess due to bacterial endocarditis.
Case report: A 46-year-old male under diagnosis of promielocitic leukemia and endocarditis presented with decreased vision in left eye (OS). Ophthalmic exploration revealed iris abscess and hypopyon with fibrinous exudate in iris of the left eye and tyndall +1 in right eye (OD). Blood culture and anterior chamber paracentesis was positive for methicillin-sensitive Staphylococcus aureus and negative for blastic cells in citology. Treatment with systemic antibiotic was initiated with total resolution of inflammation.
Conclusion: Iris abscess is an unusual septic focus in bacterial endocarditis. It is crucial to rule out an extramedullary metastasis in a patient with leukemia due to the general prognosis.

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R E S U M E N

Objetivo: Describir un caso de absceso iridiano en un paciente con leucemia.
Caso clínico: Varón, 46 años, con leucemia promielocítica y endocarditis presentó disminución de agudeza visual en ojo izquierdo (OI). A la exploración oftalmológica: en OI, lesión nodular iridiana a las 4 h con hipopión y exudado fibrinoso y en OD: tyndall +1. Cultivos de sangre y de humor acuoso dieron positivo a Staphylococcus aureus meticilina-sensible, descartando células blasticas en anatomía patológica. Se trató con antibióticos sistémicos con resolución completa de la inflamación.
Conclusion: El absceso iridiano es un foco inusual de émbolo séptico tras endocarditis bacteriana. En un paciente con leucemia es impensable descartar metástasis extramedular porque condiciona el pronóstico.

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Introduction

Bacterial endocarditis is a provoked infection on native or prosthetic cardiac valves.1 The causing agent in the native cardiac valve is Staphylococcus aureus (70% of cases). This is the most frequent agent for acute onset and poor prognosis endocarditis.2 Associated risk factors comprise diabetes, kidney failure, cardiopathy, neoplasia, immunosuppressant therapy and invasive surgical procedures.1,2

Ocular compromise in leukemia patients is frequent (50%). However, anterior segment compromise in leukemia is unusual and the iridial nodule form even more. Even so, its finding is transcendental because it indicates extramedullary tissue relapse and poor prognostic.3

The case of a male with promyelocytic leukemia history affected by a bacterial endocarditis is described. The patient developed iridial nodular lesion with inflammatory appearance in the left eye (LE).

Clinical case

Male, 46, diagnosed with acute promyelocytic leukemia and treated with intra-artery chemotherapy. At the ninth month of treatment he exhibited neutropenia and thrombocytopenia, with bone and marrow transplant being indicated. At month 5 after transplant the patient exhibited fever and was diagnosed with endocarditis secondary to intra-artery catheter. Treatment was initiated with linezid, piperacillin–tazobactan, vancomycin, cloxacillin, daptomycin and rifampicin. Blood cultures were positive to S. aureus sensitive to methicillin. Septic areas were found in the spleen and brain.

The mitral valve was substituted by a biological prosthesis. Ophthalmological assessment was requested as the patient referred diminished visual acuity (VA) in LE. VA was of 20/25 in BE. LE exhibited corectopia, 1 mm hpyopyon and a whitish iridial nodule at 4 o’clock with posterior synchieae. Funduscopy: without alterations (Fig. 1). It was decided to establish topical treatment with tobramycin/dexamethasone (Tobradex eyedrops in suspension, 1 mg/ml + 3 mg/ml) 4 times a day and cyclopleotolat (colircus 1 cyclolegic eyedrops in solution 10 mg/ml) 3 times a day with daily assessments.

Patient response was positive although the size of the iridial lesion did not change. Diagnostic paracentesis was performed to discard iridial abscess versus metastasis. The microbiological examination of the aqueous humor was positive to S. aureus sensitive to methicillin, and pathological anatomy was negative to blastic cells (Fig. 2). Final VA was 20/20 in BE with complete abscess resolution, leaving an iridial atrophic area and sectorial cataract (Fig. 3).

Discussion

Bacterial endocarditis is an infrequent septic process involving various organs and systems including the eye, with frequent

Fig. 1 – Right side: whitish nodular iridial lesion, slight mixed conjunctival injection and fibrin in anterior chamber. Left side: funduscopy without evidencing inflammatory signs.

Fig. 2 – At week 3 of systemic treatment, complete resolution of iridial abscess leaving iridial atrophic area and sectorial cataract.

Fig. 3 – Result of pathological anatomy showing enlarged neutrophiles (arrow) which indicate infection and negativity for blastic cells.
involvement at the posterior pole in the form of emboligenic focal points.\textsuperscript{1,2} The iris is an exceptional area for compromise after bacterial endocarditis. This is the second published case associated to this disease and the first described in a patient with promyelocytic leukemia.\textsuperscript{4}

Ocular posterior pole compromise of leukemia is well described, although it is infrequent at the anterior segment level. The literature has described changes in the iris color, metastatic iridian nodules, hyphema, hypopyon, glaucoma, sterile ring-shaped corneal ulcer and pannus.\textsuperscript{3}

In the case of this patient with promyelocytic leukemia, the finding of an iridian nodule discards an extramedullary metastasis, which would change the prognostic and treatment of this disease. However, considering the history of bacterial endocarditis, probably enhanced by catheterism (a crucial risk factor in the origin of septic embolisms [20–50%]),\textsuperscript{1,2} the lesion will most likely be infectious. For this reason it was decided to perform diagnostic paracentesis to send samples to microbiology and pathological anatomy which confirmed suspicions. Broad range systemic antibiotics are the standard initial treatment for bacterial endocarditis until the etiological agent is confirmed with blood culture. In this case, \textit{S. aureus} sensitive to methicillin, intravenous cloxacillin would be the drug of choice.\textsuperscript{1,2,4,5} Iridian abscess treatment is the subject of controversy: good response has been observed to systemic treatment although the use of intravitreal antibiotics would be indicated when the posterior pole is compromised. A case has been described with \textit{Nocardia} as etiological agent that required enucleation.\textsuperscript{4,5} The patient of this case responded positively to systemic antibiotics. This leads to the assumption that each case must be individualized, with key points for deciding treatment being patient condition, degree of ocular compromise and evolution.

The visual prognostic would also depend on the degree of ocular compromise and etiological agent. In this case it was significantly positive with a final VA of 20/20: however, more cases are needed to reach a conclusion.\textsuperscript{4,5}

Iridian abscesses are an unusual form of septic embolism after endocarditis. This is the second case described. The differential diagnosis with iridian metastatic nodule should be considered for a patient with promyelocytic leukemia. In such cases, the indicated diagnostic procedure is paracentesis. In what concerns treatment, systemic antibiotics would appear to be sufficient even though the clinical evolution of each case should dictate the course of action.

Conflict of interests

No conflict of interests has been declared by the authors.

REFERENCES