



Roth Spots – A Case Report

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ABSTRACT

Roth spot presents with retinal hemorrhages with white centers. The etiological factors are many, most commonly in infective endocarditis.

In this case report we present a severely anemic patient with multiple Roth spots on initial fundus examination. After blood transfusion a dramatic drop in the number of retinal hemorrhages was noted in the subsequent follow up.

Keywords: Roth spots,

INTRODUCTION

The first description of Roth spots was given by Moritz Roth, a pathologist in the University of Basel, Switzerland. He noticed retinal hemorrhages with white centers in patients with bacteremia. He named these characteristic findings as “retinitis septica”. He assumed the white centers to be disseminated septic emboli.

In 1878 Litten coined the term Roth spots and reported that they are present in upto 80% cases of infective endocarditis.

Here we present a case of severe anemia who presented to our outpatient with bilateral dimness of vision

CASE REPORT

A 35 year old male patient presented with bilateral gradual dimness of vision. The patient was severely anemic at the time. His best corrected visual acuity at the time was counting fingers in both the eyes. Anterior segment examination was unremarkable, but on dilated funduscopy bilateral multiple hemorrhages with pale centers were noticed. Subhyaloid bleed was present in the left eye (Fig 1 & 2).



Fig 1



Fig 2

On subsequent follow up there was gradual improvement with the patient's vision after subsequent blood transfusions.

On one week followup, his best corrected vision was 6/36 OD and 6/60 OS with bilateral reduction in the number of retinal hemorrhages with white centers (Fig 3 & 4).

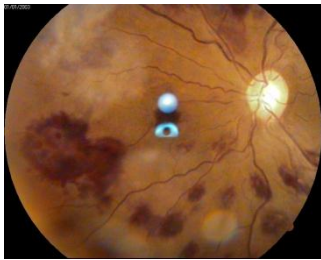


Fig 3

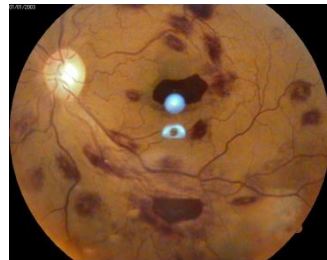


Fig 4

On 4 week follow-up, his best corrected vision had improved to 6/9 OD and 6/36 OS with further reduction in the retinal hemorrhages(Fig 5 & 6).

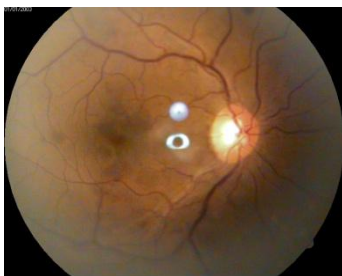


Fig 5



Fig 6

DISCUSSION

As we see here despite its alarming presentation, hemorrhages associated with anemia can resolve rapidly with the prompt correction of anemia.

On histopathology study the white center of the Roth spot was thought to consist of septic emboli as it was seen in most cases of sepsis. Fibrin was noted in aplastic anemic patients^[1]and with the help of electron microscopy was concluded that the white

center of the Roth spot represents the fibrin thrombus of a ruptured blood vessel ^[2]. Microaneurysms have been identified in many of the diabetic white centered hemorrhages^[3]

The similar white center appearance are not seen in chronic blood vessel disorders like diabetes and hypertension, this may be due to the acuteness of the blood vessel insult ^[4].

There is an association between the presence of retinal haemorrhages and thrombocytopenia in leukaemia at the time of diagnosis ^[5].But similar association between the severity of anemia and retinal hemorrhages has not been established.

Roth spots occur in a variety of conditions with a common predisposition to retinal capillary bleeding. Roth spot on itself is a morphological manifestation of retinal capillary rupture and its subsequent reparative process, and thus a nonspecific sign.

It is important to find out the underlying cause by a systematic approach which includes patient history, clinical examination and a proper use of laboratory investigations.

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