

Case Report

Retinal haemorrhage in a 10 month old infant with Terson syndrome

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ABSTRACT

The enigma of Terson's syndrome (TS) is that it is an association of intra-ocular haemorrhage and subarachnoid haemorrhage (SAH). Paediatricians see many children after varying degrees of injury to the brain. SAH is seen often in the paediatric age group after trauma due to many reasons. A combination of retinal haemorrhages and SAH is not very uncommon in these children. Interestingly many treating doctors are not aware of this syndrome and can be missed easily or diagnosed late. Blindness can result if the retinal haemorrhages are not diagnosed without delay and if appropriate measures not taken. The chance of associated TS should be searched in every patient with SAH to achieve better outcome and prevent complications. In this case study, we report a case of TS in a ten month old male child after a trauma at home.

Key words: Tersons syndrome, Vitreous haemorrhage, Subarachnoid haemorrhage, Subdural haemorrhage, Vitrectomy

INTRODUCTION

Albert Terson, French ophthalmologist in 1900 first described syndrome of intraocular bleeding (retinal, subhyaloid and in vitreous) in association with subarachnoid hemorrhage (SAH). The various causes of the intraocular bleeding in children are trauma to the brain by accidents, fall, rupture of aneurysms, increased intra-ocular pressure (IOP), shaken baby syndrome and child abuse. Terson's syndrome (TS) occurs in 4-27% of cases of aneurysmal SAH [1-3]. The treatment methods are based on clinical manifestations and surgical procedure of choice is the pars plana vitrectomy (PPV). The importance of being aware of the syndrome is very crucial, both in order to provide the adequate nursing care and to perform early vitrectomy, to restore the visual function [4]. In this case study, we present this rare syndrome in a ten month old baby.

CASE REPORT

A 10-month-old baby was admitted with a history of fall from staircase with a height of about 1.5 meters at home with vomiting. He was the second sibling of a non-consanguineous couple, had mild delay in gross and fine motor milestones of development and was

immunized to date. Previously, he had many episodes of fall at home and the parents did not seek any medical attention. There was no suspicion of child abuse. On examination, there was abrasion of the scalp on left fronto-parietal region with a soft tissue swelling. He was conscious and central nervous examination was normal with Glasgow coma scale 10/15. He was pale, with no lymphadenopathy, clubbing or jaundice or any signs of bleeding manifestations, neurocutaneous markers or hepatosplenomegaly. Systemic examination was normal. Computer tomography (CT) brain showed subdural hypodense collection of maximum thickness 8.2mm in the left fronto-temporo-parietal region with blood density in the parietal region extending to the right of the interhemispheric fissure and 7.1 mm in the right fronto-temporal region with small area of blood density in the frontal region. Bilateral subarachnoid CSF space in the frontal region appears prominent (maximum thickness 6.7 mm) (Fig. 1A). The impression was acute on chronic SDH-left fronto-parietal region and right fronto-temporal region. The child did not have seizures and anticonvulsant fosphenytoin was started to prevent seizures with mannitol infusion. The child had swelling over his both eyes after the trauma which decreased in the next few days. After 5 days, his parents were feeling that child

Figure 1: CT brain A) Subarachnoid and subdural haemorrhage; B) CT Brain repeated after 5 days

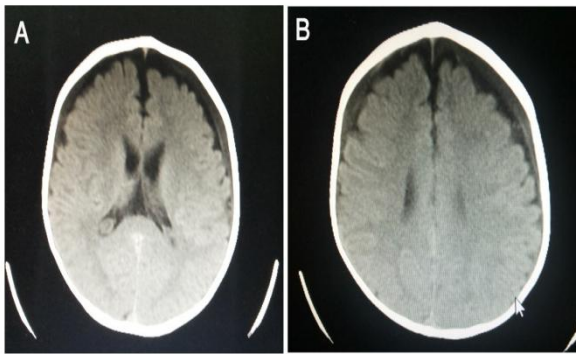
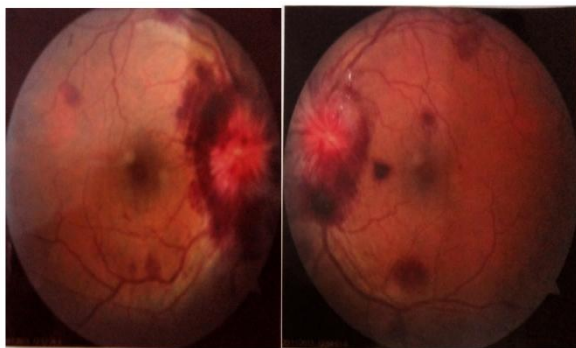


Figure 2: Bilateral retinal haemorrhages



is not looking at them. Fundus examination showed retinal haemorrhage with bilateral disc pallor. Ophthalmological examination revealed extensive bilateral retinal haemorrhage starting from disc margins and involving the macular and inferotemporally (Fig. 2). A repeat CT brain was done after five days (Fig. 1B) and was similar to first CT and there was no fresh haemorrhage into the bilateral chronic SDH, midline shift or any hydrocephalus. It was decided to manage him conservatively with the routine eye care like cold compresses, back rest and propped position, and antibiotic eye drops. His vision in right eye was found to be reduced to perception of light and left eye vision was normal gradually in the hospital days. Hb (9.1g/dl), PCV (29.3%), total count (213000/ μ l), neutrophils (47%), lymphocytes (45%), eosinophils (3.3%), monocytes (2.5%), basophils (0.2%), ESR (13mm/hr), and platelets count (210000/ μ l) were normal. Urine routine, serum electrolytes, SGPT, bleeding parameters such as BT, CT, PT and APTT, Peripheral blood smear, blood and urine culture sensitivity were normal. Diagnosis of TS was made on the positive finding of extensive bilateral retinal haemorrhages along with the SAH and SDH

which this baby had after the trauma. He was discharged with an advice to follow-up for ophthalmology evaluation, catch-up vaccination and development milestones. The child had one review and vision has improved in both eyes.

DISCUSSION

The syndrome of intra-vitreous bleeding in association with SAH was first described by Albert Terson and is known as TS. But Moritz Litten the German Ophthalmologist in 1881 is credited with first reporting about this association [1]. This important association and has not yet been reported in large numbers [2-4]. Wiethölter et al [4] reported an incidence of TS in 14.6% of all patients with SAH. The compression of central retinal vein and retinochoroidal anastomosis by elevated CSF pressure causing venous hypertension and disruption of retinal veins is postulated as the prime pathophysiological mechanism in the occurrence of TS [5,6]. Haemorrhage can also occur following subdural or increased IOP from other causes [6]. Shaken baby syndrome and child abuse are important causes [7,8]. In our case report, the child had a fall from a height of 1.5 m and has TS. CT scan showed acute on chronic SDH and SAH and it was probably due to the frequent falls in the past. He also had a mild delay in development and it may be secondary to the chronic haemorrhages in the brain. TS occurs in 4-27% of cases of aneurysmal SAH [2,3]. The bilateral haemorrhage is frequently seen as in our case which is often missed in initial examination, however it may develop as late as 12 days post SAH and associated rebleeding is common [9]. The complications like raised IOP, retinal membrane formation, retinal detachment and retinal folds are the dangers [8,10]. Fundoscopy is the gold-standard in diagnosis of the ocular haemorrhage and others are B scan /CT of the eye [12]. In our study, the fundoscopy was the main tool in our hands to pick up TS in this child.

The first marker is often a diminished visual acuity. The vitreous hemorrhage can cause a considerable visual handicap. Even the SAH patients with vitreous haemorrhage has a higher mortality [11,12]. Vitreous haemorrhage usually resolves spontaneously in 6-12 months and long term visual prognosis is good. The case presented had a fast recovery and is doing well. The surgical procedure of choice is the PPV [13,15]. Vitrectomy is a safe and effective procedure and there is a rapid and prolonged improvement in vision. If vitreous haemorrhage not clearing by 3 months in unilateral cases, surgical options can be adopted for

fast recovery. The sub-retinal haemorrhage or the trauma can cause damage to the optic nerve, retinal pigment epithelium or the retinal tissue and visual acuity loss which may persist indefinitely [14]. The most common long-term sequelae in all eyes studied was the formation of an epiretinal membrane [7]. TS should be recognized as an important reversible cause of blindness in patients surviving SAH after a trauma [3,15]. This case study concludes that awareness of TS among the Paediatricians is very important in preventing this reversible cause of blindness.

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