

Proptosis from a Cephalhematoma in a Twelve-Year-Old Girl — A Case Report —

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We report a unique case of a 12-year-old girl with unilateral proptosis from orbital extension of an extensive bilateral cephalhematoma. Loss of vision in the left eye due to severe proptosis was reversed by prompt aspiration and tarsorrhaphy.

Key Words : *Proptosis, Cephalhematoma, Head Injury*

INTRODUCTION

Proptosis following head injury may result from orbital fractures with diminution of the orbital cavity, orbital emphysema, a carotid-cavernous fistula or aneurysm, laceration and rupture of the tissues of orbit or the extraocular muscles or total oculomotor nerve paralysis (van Vliet, 1976). A subfrontal epidural hematoma (Gruszkiewicz, 1972; Romano et al., 1983) and a subdural hematoma with fracture of the sphenoid bone (Skalka, 1982) have been reported to cause traumatic proptosis. We have reported a case of proptosis from a subgaleal hematoma (Lee et al., 1988). A similar case in a child with congenital hypofibrinogenemia has been reported (Prakash, 1990). We recently experienced a further case of traumatic proptosis in a 12-year-old girl with a cephalhematoma. Since cephalhematoma occurs almost exclusively in the newborn period and is rare at other times of life, and its orbital extension resulting proptosis is exceptional, we would like to report this case briefly.

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CASE REPORT

This 12-year-old girl came to the Soonchunhyang University Chonan Hospital with severe proptosis for one day. She fought with a classmate about one week prior to admission. She was knocked against a desk and her hair was grabbed and pulled. However, there was no apparent swelling or scalp contusions at that time. A few days later, the scalp began to swell and progressed until she could not close her left eye.

On admission, her left eye was severely protruded and deviated downward (Fig. 1 left). Ocular movement was restricted in all directions on the left side. Left pupil was not reactive to light. She could not count fingers with her left eye. She said that she lost her left vision an hour before. There was extensive scalp swelling which was compartmentalized by coronal and sagittal sutures (Fig. 1 right). No neurological deficits were found. The patient's vital signs were normal. There was no definite evidence of coagulopathy; hemoglobin was 11.7 gm/dl, hematocrit 37%, platelet count 204,000/cc, bleeding time 2 minutes, coagulation time 9 minutes, prothrombin time 85%, and partial thromboplastin time 27 seconds. Computed tomography (CT) scans of the brain and the orbit showed extensive bilateral cephalhematoma and left proptosis with orbital hema-



Fig. 1. Photographs of the patient reveal severe proptosis and downward deviation of the left eye(left) and scalp swelling which was separated by cranial sutures(right).

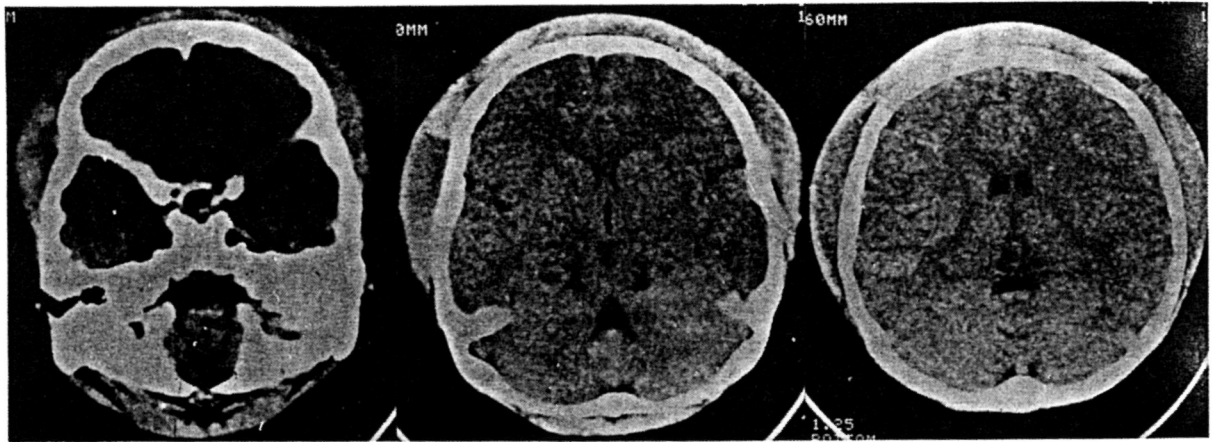


Fig. 2. CT scans of the brain reveal extensive soft tissue swelling in both frontotemporo-parietal region.



Fig. 3. CT scans of the orbit reveal left retro-orbital hematoma on the superomedial and superolateral portions of the orbit(arrows) with severe proptosis.

toma(Fig. 2 and 3). Neither intracranial pathological lesions nor skull fractures were found.

An urgent decompression was required in order to save her vision. We have reversed bilateral proptosis from a subgaleal hemato-

ma by aspirating the blood in the subgaleal space(Lee *et al.*, 1988). We guessed the lesion being another case of proptosis from a subgaleal hematoma. Under local anesthesia, a small incision was made in the left temporal region. However, the hematoma was col-

lected not in the subgaleal space but in the subpericranial space. The hematoma was gushed out after incising the temporal fascia and splitting the muscle. A hemovac drainage tube was introduced under the temporal muscle, and the hematoma was aspirated. Two pints of whole blood were transfused. On reexamination, the hematoma was immobile and did not cross the suture lines. Ocular pain was reduced immediately; however, she could not close her left eye even after the aspiration. A tarsorrhaphy was performed. The proptosis was reduced little by little over a period of several days. Visual acuity checked on the fourth postoperative day (POD) was 1.0 (OD) and 0.03 (OS). The Hemovac was removed on the eighth POD. On the 12th POD, she could close her left eye, and tarsorrhaphy was removed. She was discharged on the 14th POD.

DISCUSSION

Although the mechanism of formation of the cephalhematoma is unclear, the key element is considered to be stripping of the periosteum with or without skull fracture (Bruce et al., 1985). Fracture of the underlying skull is found in 25% of infants with cephalhematoma (Kendall and Woloshin, 1952). In the newborn period, the periosteum is not tightly adhered to the skull, so it can be stripped by squeezing of the skull within the pelvic outlet during delivery. Cephalhematoma occurs almost exclusively in the newborn period and usually being associated with forcep deliveries. It is rare at other times of life (Bruce et al., 1985). We did not expect the lesion in this 12-year-old girl was cephalhematoma preoperatively. It is most often unilateral and usually parietal in location (Hovind, 1986). It is confined locally by the periosteal-fibrous union of the calvarial sutures and immobile (Shapiro, 1987). Thus, it can be distinguished from subgaleal hematoma. The time sequence of trauma, cephalhematoma, then proptosis could eliminate the possibility that orbital hematoma might occur directly from trauma.

From a neurosurgical point of view, cephalhematoma is rarely of clinical importance

in itself even though there have been a few case reports with complicating lesions, such as infection (Burry and Hellerstein, 1966), communication with epidural hematoma (Aoki, 1983), or calcification (Shapiro, 1987). Orbital extension of cephalhematoma causing proptosis does not appear to have been reported. Since the orbital septa is an extension of the periosteum and cephalhematoma is one of subperiosteal hematoma, the orbital septa cannot protect against orbital extension of cephalhematoma. Bleeding from the skull, however, almost always ceases by pressure produced by the hematoma, because the bleeding is venous in nature. In this patient, the pressure further stripped the orbital septa resulting in an extremely rare complication. Since an urgent decompression was needed for saving her vision, the systematic ocular examination was omitted. At any case, the prompt evacuation of the hematoma and tarsorrhaphy saved her vision.

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