incapacitating postural headache associated with nausea, vomiting, dizziness and diplopia. When this occurs following spinal anaesthesia for relatively minor surgery it can lead to financial, physical and psychological burden to patients.

The most likely cause for PDPH is leakage of cerebrospinal fluid from a hole in the dura, the remarkable feature being that such a trivial injury can cause such severe symptoms. Conservative management with bed rest, analgesics and fluids is helpful in those with mild symptoms. Relief however, is not dramatic and sealing that hole in the dura is the only way to achieve rapid relief. Gromley (1960)[1] was the first to report on the use of autologous blood into the epidural space to "patch" the hole and there have been many reports of success with this technique with some authors even advocating its prophylactic use[2]. We would like to share our local experience with this method of relief of "spinal headache".

Eight patients developed severe PDPH over a period of 16 months during which time 107 spinal anaesthetics were performed. There were 5 females and 3 males with a mean age of 35 ± 9 years. Seven patients developed severe headache within 48 hours after the spinal anaesthetic. One patient (31/F) developed symptoms of PDPH twice; following a spinal anaesthetic for a D & C and after a general anaesthetic for a repeat D & C. One patient (52/M) presented himself at the A & E department with severe PDPH 7 days after a spinal anaesthetic for a herniorrhaphy.

Epidural blood patches were offered to all patients within twenty-four hours after instituting conservative management. Two patients refused. 7 epidural blood patches were done in 6 patients. Twenty ml of venous blood was drawn from the patient using an aseptic technique and injected slowly into the epidural space. The injection was stopped if the patient complained of backache or shooting pain down one leg. The average volume of blood used was 13 ± 5 ml.

All patients had dramatic relief of their symptoms soon after the blood patch and could be discharged the next day. Two patients complained of slight backache and pain down one leg which resolved in a day with simple analgesics. One long term follow up study[3] has shown EBP to be a safe, effective method of treating PDPH provided the proper diagnosis is made and adequate precautions taken in performing it.

We feel that an epidural blood patch should be offered to all patients who develop severe PDPH from any cause – spinal anaesthesia, diagnostic lumbar puncture or a lumbar myelogram – and who do not get relief from twenty-four hours of conservative management. It can cut down a lot of unnecessary suffering.

R Vijayan, FRCA
L Chan, FANZCA
Department of Anaesthesiology,
University of Malaya, 59100 Kuala Lumpur

References

1. Gromley JB. Treatment of postspinal headache. Anaesthesiology 1960;21 : 565-6.
2. Cheek TG, Banner R, Sauter J, Gutche B. Prophylactic extradural blood patch is effective. British Journal of Anaesthesia 1988;61 : 340-2.
3. Abouleish E, Vega S, Blendinger I, Tio TO. Long term follow up of epidural blood patch. Anaesthesia and Analgesia 1975;54 : 459-62.

Hereditary Angioedema: Report of a Family in Malaysia

Sir,

Hereditary angioedema (hereditary angioneurotic oedema, HAE) is a rare cause of angioedema[1]. It is frequently mismanaged. Antihistamines and corticosteroids have little response. We are not aware of its report in the East. We report a Chinese family with HAE in Malaysia.

The elder brother presented at 18 years old with repeated episodes of limb swelling. The swellings were tender, erythematous but non-pruritic. HAE was confirmed as his C1 esterase inhibitor level was low

at 4 mg/dl (Normal = 15-35). With danazol 200-300 mg daily, his episodes of angioedema decreased. A few years later, when he developed laryngeal oedema, his condition was not recognised resulting in delay in definitive therapy. Fortunately, he recovered with an emergency tracheostomy. He later had another episode of laryngeal oedema which was arrested with fresh frozen plasma and tranexamic acid 1 gm qid.

The younger brother presented at 20 years old with progressive swelling of his right upper limb over 1 day associated with laryngeal oedema. A diagnosis of hereditary angioedema was made as he had a family history. He recovered within hours of administration of fresh frozen plasma and tranexamic acid. Danazol 200 mg bd was commenced as prophylaxis.

Their father, aged 52 years, also had spontaneous angioedema from the 2nd to 4th decade of life. Both brothers have remained well on follow up with danazol.

C1 esterase inhibitor (Cl INH) deficiency, the basic defect in the autosomal dominant HAE, results in the autoactivation of the complement cascade leading to low levels of C4 and C2 during an acute episode[1,2]. The C3 level remains normal. This autoactivation activates a kinin-like vasoactive mediator which causes oedema.

HAE causes oedema in three sites, cutaneous, intra-abdomen and larynx. Laryngeal oedema is life-threatening[1,2]. The oedema is painful and develops within hours, without urticaria or pruritus. Emotional and physical stress can trigger an attack of angioedema.

Although it may spontaneously resolve over days, acute airway obstruction requires the prompt administration of fresh frozen plasma and tranexamic acid. Tranexamic acid prevents the activation of plasmin which is needed for the activation of the mediator. Fresh frozen plasma will replace the deficient C1 INH. Attenuated androgens[3], i.e. danazol and stanozolol, can increase the synthesis of normal functioning C1 INH. It is used as prophylaxis for patients with previous life-threatening complications. With prophylaxis, both brothers had decrease frequency of attacks.

It is important for physicians to be aware of HAE as it differs from allergic forms of angioedema and the use of fresh frozen plasma, tranexamic acid and danazol.

K W Leong, MRCP
J J Bosco, FRACP
Department of Medicine,
Faculty of Medicine, University of Malaya,
59100 Kuala Lumpur

References

1. A Agostoni, M Cicardi. Hereditary and acquired Cl-inhibitor deficiency: Biological and clinical characteristics in 235 patients. Medicine 1992;71 : 206-15.

2. TC Sim, JA Grant. Hereditary angioedema: Its diagnostic and management perspectives. The American Journal of Medicine 1990;88 : 656-64.

3 JE Fabiani, P Paulin, G Simikin, *et al.* Hereditary angioedema: therapeutic effect of danazol on C4 and Cl esterase inhibitors. Ann Allergy 1990;64:388-92.

How Parents in a Rural Area of Pekan District, Pahang Perceive Immunisation

Sir,

The Chini land scheme with an area of 21,363 hectares and a population of 23,160 is situated in the interior of Pekan District, Pahang. The population is almost homogeneously Malay (93.4%), with pockets of aborigines (6.5%). Indians and Chinese constitute less than 0.5% respectively. There were about 150 followers of a religious group. The health infrastructure of the land scheme consists of a health centre and 5 midwife clinics. The latter consist of two settler homes and a temporary village clinic. Subsidiary clinics are also provided on a regular basis by a team from the health centre to some selected isolated areas in the scheme. All these facilities carry out the immunisation programme. The health centre is situated about 75 km away from the Pekan District Hospital. The average distance of a house to the nearest clinic is about 9 km.