Pressure alopecia in pediatric population following prolonged urologic surgeries

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INTRODUCTION

Immobilization of the head during lengthy surgical procedures has been associated with rare occurrence of postoperative pressure alopecia (POPA). Although not fatal, this can lead to an emotionally distressing scenario not only for the patient but also for the families. This preventable complication is due to ischemic changes leading to cessation of follicular hair activity. To our knowledge, few case reports associated with various prolonged surgeries have been reported but the authors did not come across any case reports in the literature that were associated with patients undergoing urologic procedures.

CASE DESCRIPTION

Case 1: An 18 year old male, weighing 74.2 kg with spina bifida and neurogenic bladder, presented for Mitrofanoff procedure. He had undergone multiple uneventful surgeries in the past. Patient stayed supine during the procedure which lasted 11 hours. Occipital alopecia was noticed at the end of the case.

Case 2: A 5 year old girl, 27 kg, presented for bladder reconstruction and Mitrofanoff procedure due to neurogenic bladder. The patient's intraoperative course was stable and was extubated successfully after an 8-hour procedure. Postoperatively, a bald patch was noticed at the back of her head with pattern resembling that of the headrest on which her head rested during the entire procedure.

Case 3: A 16 year old male, weighing 63 kg, presented with left severe hydronephrosis secondary to ureteral stones. He underwent an uneventful left ureterolysis and was extubated at the end. The entire procedure lasted 6 hours. A bald spot was noticed at the back of his head when the patient presented 3 weeks later for surgical follow-up.

DISCUSSION

POPA is a rare complication that can be immensely disturbing if encountered. This term was first mentioned in the literature by Abel and Lewis et al. who reported eight cases of postoperative alopecia in women undergoing prolonged gynecologic surgeries. In their report, the authors attributed the hair loss to be due to obliterative vasculitis of the dermis that led to vascular damage and ischemia induced by consistent pressure of the head against the operating table. Later, Abel et al added eight additional patients to these cases to demonstrate the reversible nature of hair loss with regrowth occurring within 120 days. Immobilization of the head during lengthy surgical procedures is a known risk factor; therefore, it would involve different preventive measures to prevent it. The head weight of a normal adult in supine position usually rests on the dependent occipital area. The resultant pressure over prolonged period of time can induce localized ischemia and may cause temporary cessation of follicular activity.

The ischemia is compounded by hypotension secondary to anesthetic agents, use of vasoconstrictor agents, blood loss or inadequate fluid resuscitation that lead to hypoxic injury to hair follicles. Other contributing factor is trendelenberg position. Most cases are self-limiting with regrowth within 2 weeks. However, few cases of irreversible alopecia have been reported. In a case series of 65 cardiac surgical patients incorporated head repositioning every 30 minutes, both during general anesthesia and recovery. Twenty-nine patients developed permanent postoperative alopecia despite frequent head repositioning indicating factors other than head immobility to be a cause. These patients had remained endotracheally intubated for periods of more than 24 hours and the duration of pressure seemed to be more important than the intensity of the mechanical pressure in causing the alopecia. Furthermore, patients with this condition typically complain of occipito-parietal pain and tenderness within 24 hours of surgery. The signs include swelling, edema, crust, and ulceration of the affected area.

It is of interest that our patients developed alopecia despite frequent head repositioning. Moreover, these patients stayed hemodynamic ally close to baseline during the procedure. All of our patients developed asymptomatic postoperative temporary hair loss with subsequent regrowth in few weeks. The cause of POPA is most likely multi-factorial; therefore, it would involve different preventive strategies. Some of the key factors in preventing this rare complication include gentle massaging of the head, extra soft padding, minimizing external pressure and maintaining stable hemodynamics.

The head position must be strongly advocated as a prophylactic maneuver. We also recommend a dermatology consult regardless of time period of hair regrowth.

CONCLUSION

Outcomes of patients facing POPA are mostly favorable but can result into significant psychosocial issues for patients and their families. Anesthesia providers should be aware of this rare complication and provide measures to prevent it.

REFERENCES