Letters to Editor

was continued pre-operatively. She received polyethylene glycol solution for bowel preparation prior to surgery and morning potassium was 3.3 Meq/l. Laparoscopic bilateral adrenalectomy was performed uneventfully. During the surgery, she received hydrocortisone (100 mg, intravenous, after adrenal removal) and normal saline as maintenance fluid. In recovery half-an-hour after surgery, she developed unexplained tachycardia and ST depression [Figure 1]; however, the patient reported no complaints, seemed comfortable with no chest or surgical site pain. Being diabetic possibility of silent ischemic episode was considered due to associated severe tachycardia (130 beats/min). Quantitative troponin-I was normal suggesting the absence of myocardial ischemia. Twelve lead ECG showed global ST depression, which is unlikely to be caused by ischemia. Arterial blood gas showed severe hypokalemia (1.9 Meq/l), lactate of 0.2 mmol/l with all other values well within normal range. In the absence of possibility of ischemia (normal troponin, lactate) global ST depression was attributed to severe hypokalemia. This was further confirmed by normalized ST depression with potassium correction through the central line in next 6-8 h. The probable cause of precipitation of severe hypokalemia in our patient with already potassium on the lower side was multifactorial. Use of bowel preparation is known to cause potassium depletion. Corticosteroids used during the bilateral adrenalectomy also precipitate hypokalemia by potassium internalization and urinary excretion. Perioperatively we used glucose insulin neutralizing drip; although, potassium was added to the solution (as per standard regimen), but it is still known to cause hypokalemia due to inter-individual response variability. Normal saline (avoiding gluconeogenic -ringer lactate) as maintenance fluid can also contribute to hypokalemia. Hypokalemia is a rare, but well-known cause of ST depression with tachycardia. Although limb muscle weakness can be associated, it may not however become apparent in a non-ambulatory immediate post-operative patient. Such a global ST depression associated with severe post-operative hypokalemia has not been reported previously. In asymptomatic patients with new onset, unexplained global ST depression in the post-operative period, hypokalemia should be ruled out as many of the above precipitating factors are often present in many surgical patients.

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Anesthetic management in a patient with Papillon Lefevre syndrome

Sir,
A 16-year-old male a known case of Papillon Lefevre
syndrome (PLS) since childhood was referred for pre anesthetic examination for excision of hydatid cyst in right lung. He complained of cough with expectoration and low-grade fever off and on for last 6 months with surgical intervention for hydatid cyst of liver 3 years back.

He had flaking of skin of his palm and soles and recurrently swollen and friable gums since the age of 6-7 years. He also had premature shedding of deciduous teeth and loss of most of his permanent teeth. He was the first child born to apparently healthy non-consanguineous parents after an uneventful pregnancy and birth.

On general physical examination, symmetric, well-demarcated, yellowish, keratotic plaques on the skin of the palms and soles extending onto the dorsal surface with dystrophy and transverse grooving of the nails were seen in Figures 1 and 2. Sweating and hair were normal. Swollen and friable gums with loss of most of his permanent teeth were found on oral examination [Figure 3]. Airway examination, systemic examination, biochemical and hematological investigations were normal. Chest X-ray and computed tomography scan revealed rounded opacity in right lung suggestive of hydatid cyst. Pulmonary function test and X-ray skull were normal. Patient was accepted under American Society of Anesthesiologists Grade I.

Pre-operatively, dental abnormalities were documented in the PAC chart. After careful intravenous (IV) access, patient was pre-medicated with IV midazolam 1.5 mg and glycopyrolate 0.2 mg. The patient was then asked to identify the loose teeth and knots were taken with silk suture over the loose teeth, the ends of which were kept hanging outside the mouth.

18 G thoracic epidural catheter was placed at T9-T10 with loss of saline technique and 3 ml of lignocaine with adrenaline 2% was given as test dose. Anesthesia was induced with injection fentanyl 1 μg/kg, propofol 2 mg/kg and vecuronium bromide 0.1 mg/kg. After careful laryngoscopy, left double-lumen tube (DLT) 35 FG, was inserted gently and confirmed fiberoptically. 18 G central venous pressure catheter through right basilic vein and arterial cannulation through right radial artery was accomplished. Morphine 2.5 mg diluted in 6 ml of normal saline was given through epidural catheter. Patient was placed in left lateral position and DLT was rechecked fiberoptically. Anesthesia was maintained with O2, N2O, isoflurane and vecuronium. At the time of closure, 6 ml of 0.125% bupivacaine was given through epidural catheter. Patient made an unremarkable recovery. The silk sutures from the teeth were removed in the recovery room after the patient was fully awake. 2.5 mg of morphine was repeated through the epidural catheter and 1 g of injection Paracetamol was infused.

PLS is a rare autosomal recessive disorder of keratinization, characterized by palmoplantar hyperkeratosis, periodontopathy and precocious loss of dentition.[1] Two French physicians Papillion and Lefevre first described it.[1] It is a manifestation of

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**Figure 1:** Keratotic plaques on the skin with dystrophy and transverse grooving of nails

**Figure 2:** Keratotic plaques on the foot

**Figure 3:** Loss of teeth
homozygosity of autosomal recessive genes with consanguinity as a contributive factor.

PLS is a very uncommon diseases and thus, there is very little reported experience on perioperative management of these patients. However, the anesthetic considerations have been classified into two parts: Pre-operative and intraoperative.

Patients with PLS have severe peridontitis with premature loss of primary as well as permanent teeth. Severe resorption of alveolar bone gives the teeth a floating in air appearance on dental X-ray film. More important is that patients may have loose teeth at an age when it is not expected. Thus, dental loss and dental abnormalities should be clearly documented pre-operatively. The cephalometric findings of maxillary retrognathia, decreased lower facial height, retroclined mandibular incisors and upper lip retrusion may be a cause for difficult intubation.

The palmoplantar keratoderma involves the entire surface of the palms and soles extending on to the dorsal surface of the hands and feet. In case of extensive skin lesions, IV access may be limited. Furthermore, decreased white blood cell functions and increased susceptibility to bacterial infections may lead to recurrent pyogenic infection of the skin.

Loss of most of the permanent teeth may make mask ventilation difficult. With swollen and friable gums and multiple loose teeth one has to be careful with laryngoscopy and intubation to avoid damage to pre-existing teeth.

Generally, it is advisable for patients to get very loose teeth extracted prior to general anesthesia. However, in the present case, multiple loose teeth were present. Also, the outer diameter of 35 FG DLT when compared with the corresponding single lumen tube (7-7.5 mm ID) appropriate for intubation in this patient is 1.5-2 mm more. Therefore, it was planned to secure the multiple loose teeth with silk sutures to aid in double lumen intubation, for easy retrieval of the teeth in case of dislodgement and to prevent further migration either into the airway or esophagus.

Asymptomatic ectopic calcification in the choroid plexus and tentorium and pyogenic liver abscess are other known complications of PLS.

To the best of our knowledge, securing the loose teeth with silk sutures is an innovative management in a patient of PLS being reported in the anesthesia literature.

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