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Case Report

EXTRACUTANEOUS MANIFESTATIONS OF SHABBIR SYNDROME

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ABSTRACT

A 1.5 years old boy presented to medical emergency in critical condition with hoarseness since birth, recurrent chest infections and acute severe respiratory distress. On endolaryngeal examination, subglottic mucosal granulation tissue and subglottic stenosis, obstructing 70% of tracheal lumen was seen. The patient was also having scarring in skin at different stages of healing, conjunctival granulomatous lesions, nail and enamel dysplasia. With multidisciplinary approach, patient was diagnosed with Shabbir Syndrome for the first time. In this report, we have discussed the extracutaneous manifestations of Shabbir Syndrome and its management.

Keywords: Shabbir Syndrome, LOCS, Logic Syndrome, Tracheostomy, Airway Management

INTRODUCTION

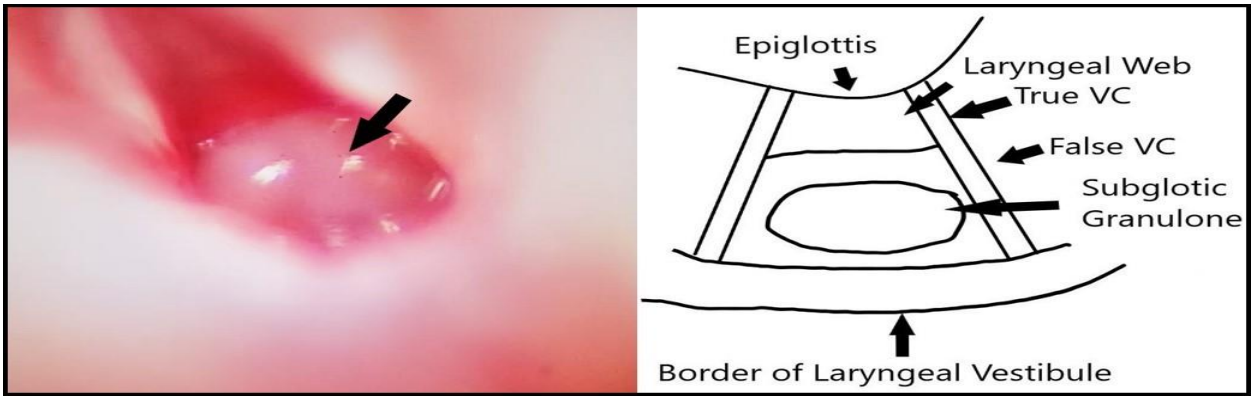
Shabbir Syndrome or Laryngeo-Onycho-Cutaneous (LOC) Syndrome is a rare, congenital epithelial disorder, a subtype of junctional epidermolysis bullosa (JEB), specifically called JEB LOC [1-3]. It causes uncontrolled development of vascular granulation tissue in the form of undulated crusted skin ulcers, nail dysplasia, laryngeal granuloma/webbing/stenosis, dental enamel dysplasia, and conjunctival granulomas [4]. Out of all the other complications, laryngeal manifestation is the most critical one since it is life threatening and needs emergency management. The mortality in Shabbir Syndrome is mostly caused by the airway obstruction [4, 5]. It is an autosomal recessive disorder limited to the Punjabi, consanguineous families of Pakistan and India. It is associated with alpha-3 chain of Laminin-332 (LAMA3) mutations [6]. Less than 50 cases are reported in the literature so far. Prognosis is poor, due to late diagnosis/ recurrent complications followed by late or inadequate management [7].

CASE PRESENTATION

A 1.5 years old male of 5 kg weight presented in medical emergency in a critical condition with complain of severe breathlessness. According to his father, patient had a 1.5 months history of progressively worsening lower respiratory tract infection associated with productive cough, fever, decreased appetite, weight loss, and decline in general health. He was a product of consanguineous marriage and his elder sister died at the age of 1 year due to similar signs and symptoms. On general physical examination, patient was semi-conscious, gasping, vitally unstable, pale, emacerated, and had multiple scars and skin lesions at different stages of healing. According to father, those skin erosions increased in size, number, and frequency over the period of last 6 months. On respiratory system

examination, signs of severe respiratory distress were present including nasal flaring, use of accessory muscles, inspiratory stridor, intercostals and subcostal recessions, tracheal tug, peripheral cyanosis, and bilateral coarse crepitations with decreased air entry to the lung bases. On oro-pharyngeal examination, patient had multiple mucosal lesions which tended to bleed on touch, dental dysplasia with hypoplastic dental enamel, dental caries, bleeding ulcers and swelling of tongue. On integumentary examination, dysplastic nails, with black discoloration of swollen nail beds were observed. Eye examination under slit lamp revealed fleshy granulomatous lesion arising from the conjunctiva near lateral canthus. This lesion was developed few months after birth. Father also gave history of weak cry at the time of birth and hoarseness of voice from the early age. In the last few weeks, these pre-existing signs and symptoms had rapidly progressed.

AAGBI monitor was attached in the emergency room and the recorded vitals were as follows: Baseline Blood Pressure 100/70mmHg, Heart Rate 152 beats/min, SpO_2 78% with high flow Oxygen supplementation, Respiratory Rate 48/min, Pulse Rate 150/min, Core Temperature 98.6F whereas the peripheries were cold and clammy. The urgent baseline hematological investigations revealed Hemoglobin level 7.2mg/dl, peripheral blood smear showed microcytic hypochromic cells with low MCV and MCH. TLC, platelet count, coagulation profile, liver and renal function tests were normal. Chest Xray AP view revealed diffused, patchy echogenicities all over the lung field more prominent at the lung bases bilaterally. Xray lateral view neck revealed soft tissue mass obstructing the subglottic airway. Urgent evaluation from an Ear, Nose, and Throat (ENT) surgeon was done. Emergency Bronchoscopy and airway assessment under general anaesthesia was suggested. After parental counseling and informed written consent for bronchoscopic examination, general anesthesia, and tracheostomy, the patient was immediately shifted to Emergency Operation Theater. Pre-op medication included intravenous antibiotics, IV glycopyrronium, Omeprazole, Odansteron, and Dexamethasone. Under constant vital monitoring, patient was pre-oxygenated with 100% oxygen for approximately 5 minutes followed by the induction of inhalational anaesthesia with 4% sevoflurane mixed with 100% oxygen. For the maintenance of anesthesia, mixture of 2% sevoflurane in 100% oxygen was used in intermittent mask ventilation. Patient was nebulised via T-piece and in-built circuit using lidocain (2ml) and adrenaline (1:100,000 units). An oxygen source was also attached to the oxygen port of rigid bronchoscope for the prompt delivery of adequate oxygen to the lungs during the whole procedure. Rigid fiberoptic bronchoscope of 3.5mm was introduced into the larynx of the patient. The unusual findings were laryngeal web, obscuring almost one-third of the glottic aperture. The rigid bronchoscope of 3.5mm could not pass through the narrow glottic opening so a 3mm bronchoscope was used to visualize the subglottic region. Immediately after passing through the vocal cords, a lobulated, soft tissue granuloma obstructing about two-third of the airway was seen (Fig. 1). Samples for the histopathological examination of these lesions were taken via excision biopsy. Later, the biopsy report revealed inflamed granulomatous tissue growth. Immediate decision for tracheostomy was taken to relieve the respiratory obstruction in this child. Tracheostomy was done below the level of sub-glottic granuloma. Portex tube of 3.5mm was introduced in the tracheostomy stoma and was fixed in place with the neck straps



. **Figure 1. Endoscopic Findings of the Patient. VC: Vocal Cords**

Patient was stable during the whole procedure but still, anaesthetists did not recommend prolonged anaesthesia at that time because of possible complications. The surgical correction of laryngeal web and subglottic granuloma via cold cut laser excision surgery was planned in the follow-up visits. The patient stabilized after the surgical tracheostomy, was treated for LRTI (Lower Respiratory Tract Infection) in medical ward and was then discharged. During his hospital stay, patient was also evaluated by dermatologists, dentists, and ophthalmologists for the treatment of other complications of Shabbir Syndrome.

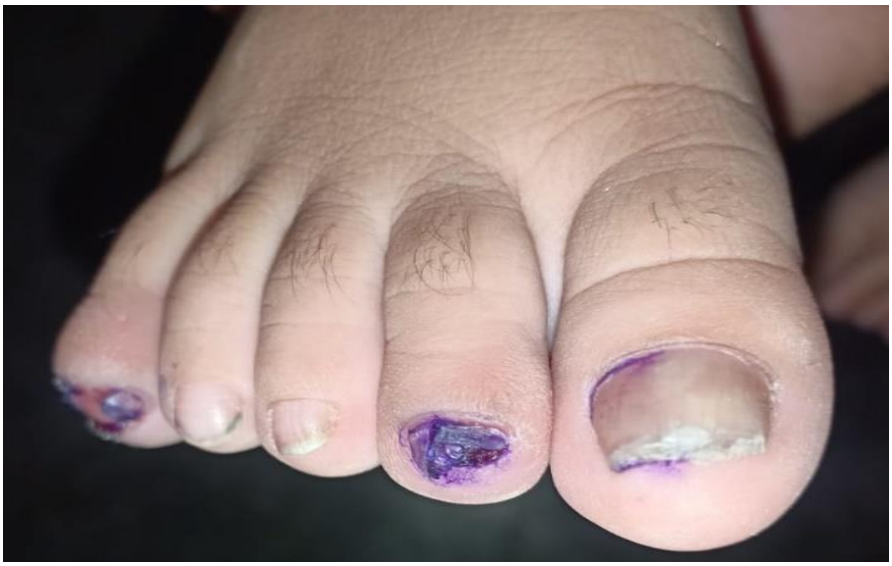


Figure 2. Dysplastic nails, with black discoloration of swollen nail beds

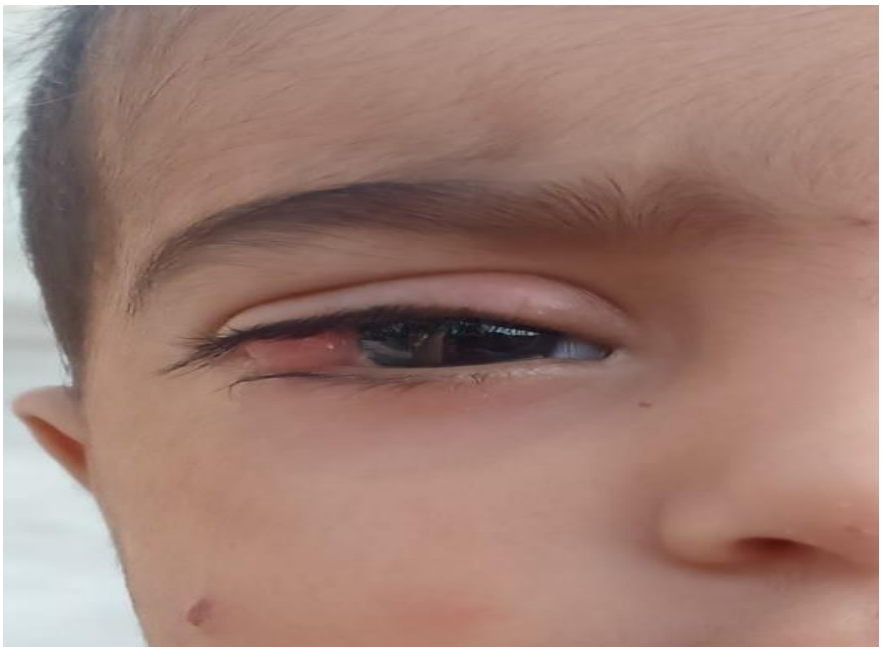


Figure 3. Symblepharon. Fleshy granulomatous lesion arising from the conjunctiva near lateral canthus

DISCUSSION

Laryngo-onycho-cutaneous (LOC) Syndrome or Shabbir Syndrome is a rare autosomal recessive epithelial disorder [1]. In 1986, Shabbir et al discovered this unusual combination of signs and symptoms and mentioned it in his case series of 22 patients who were exclusively Punjabi Muslims with history of consanguineous marriage [2]. At that time, this syndrome was not known to the western world. Later, Ainsworth et al [3] verified the findings in his case study of 27 patients. Our case had the classical presentation of Shabbir Syndrome being the product of consanguineous marriage with the history of early death of one undiagnosed sibling due to respiratory obstruction [4]. The symptoms present in early infancy however, lack of early diagnosis due to limited knowledge and awareness about this disease is a dilemma. Respiratory symptoms are usually the first ones to appear with weak cry, hoarseness of voice, and recurrent respiratory infections. These symptoms develop in the background of laryngeal web, laryngeal stenosis, or subglottic/ supraglottic granuloma or stenosis [4, 5]. Usually within few weeks after birth, crusted granulomatous skin lesions start to appear, followed by nail and teeth dysplasias. There may be extensive conjunctival involvement starting from granuloma formation, scarring, symblepharon, leading to total palpebral occlusion resulting in blindness [5]. Interestingly, our patient had all of the aforementioned symptoms and was not diagnosed with Shabbir Syndrome till the age of 1.5 years. These signs and symptoms temporarily resolve with the use of antibiotics or do not respond to the generic treatment at all. Long term use of oral or topical Corticosteroids, thalidomide, and dapsone have shown positive results in most of the patients [6]. For the ultimate management of the strictures and obstruction related manifestations, tracheostomy, suprapubic catheterization, and gastrostomy may be required especially during the first few years of life. Most common cause of death in early ages of the patients of this subtype is respiratory obstruction. Tracheostomy is a life-saving procedure in this case, however; it should only be attempted by the experts in special cases like Shabbir Syndrome. It is likely to induce trauma to the vascular granulation tissue while performing Direct Laryngeoscopy which can cause bleeding and quick on-table death of the patient. Moreover, the routine techniques of anaesthesia induction are omitted while dealing such patients. Shallow anaesthesia can activate reflexes and patient can go into laryngeal spasm during the procedure. Additionally, neuromuscular blockers are not recommended for these patients in order to avoid respiratory paralysis and severe respiratory obstruction. So, as mentioned, in our case, the patient was given inhalational anaesthesia. He was on spontaneous breathing and yet fully sedated.

Unfortunately, the ENT surgeon was not able to bypass the subglottic granuloma due to its unknown nature and possibility to bleed. Whenever an unusual growth is seen on the endoscopy, biopsy should be taken by following the general rule. The surgeon spontaneously decided to keep this surgery as a diagnostic direct laryngoscopy with emergency tracheostomy and planned surgical management of the lesions after the biopsy report, parental counseling, and written informed consent. While performing the literature review for this study, we found only a few case reports which fully described the respiratory difficulties and their elaborative management details. In this case, the tracheostomy proved to be a life-saving procedure and patient became vitally stable after the surgery; however, his chest infection took a few days to get resolved.

CONCLUSION

The knowledge of this rare disorder is limited among professional healthcare providers as well as the public. The family history of the patient and marital history of the parents is important while suspecting Shabbir Syndrome. Early diagnosis enables the child to get early management and avoid long-term complications such as blindness, respiratory obstruction, and in some cases, death [7].

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