SPONTANEOUS EYE HERNIATION ASSOCIATED WITH FLOPPY EYELID SYNDROME AND NON-INVASIVE PRESSURE VENTILATION (NPPV)

Arisimnye Nunez, George Apergis, Lutheran Medical Center

Case Reports: Noninvasive positive pressure ventilation (NPPV) allows the delivery of positive pressure mechanical ventilation to the lungs without endotracheal intubation. NPPV is used for the management of both acute and chronic respiratory failure. The few complications of NPPV complications include asphyxiation of gastric content, epistaxis, conjunctivitis, and contact dermatitis. We present a case of unilateral luxation of the orbit in a patient with floppy eyelid syndrome while ventilated with a facemask NPPV. Case Description: A 79-year-old Caucasian female presented to the ED complaining of labored breathing. Physical examination revealed bilateral lung wheezes, crackles, trace lower extremity edema and mild exophthalmos bilaterally. Pertinent work-up showed normal WBC, TSH 0.34, 11% bands, pCO2 of 70, PH 7.15. Past medical history included diabetes, COPD and CAD. The patient was intubated, admitted to MICU and started on IV vasopressin and piperacillin/tazobactam. After 2 days of therapy, the patient’s condition improved and she was extubated. Later, the patient developed episodes of hypercarbia and was started on NPPV via a face mask at 40% FIO2, PEEP 5 mmHg, PC 15mmHg. On hospital day 4, the patient was found to have larynx right eyeball while on face mask NPPV. The eye was placed back into the orbit by applying gentle pressure. Ophthalmology evaluation revealed floppy eyelid syndrome. The patient had preserved eye acuity and function after the episode. CT orbit showed proptosis bilaterally worse on the right side, no fractures or tumor. Discussion: Spontaneous orbital herniation is a rare and distressing event. Trauma is the most common cause. Floppy eyelid syndrome is an ocular condition characterized by flaccid, easily everted upper lids. It is usually seen in overweight, middle-aged males and has been linked to eye herniation. To our knowledge, this is the second case of eye herniation associated with the use of NPPV. The exact mechanism of this event is unknown. Possible explanation relates to synchronization of the patient’s breathing with NPPV. Breath-induced positive pressure could result in an increase in cranial venous pressure and in engorgement of intracranial blood vessels; these events could thus, precipitate exophthalmos, especially on a patient with laxity of eyelids such as patients with floppy eye syndrome.

CASE SERIES OF FIXED LOW-DOSE RECOMBINANT FACTOR VIIa FOR WARFARIN REVERSAL IN NEUROSURGICAL PATIENTS

Gregory Blank, UC Health; University Hospital, Serena Harris, Melissa Vandenberg, Karen McAllen, Spectrum Health Hospitals

Case Reports: Patients receiving warfarin have a 5-10 fold higher risk for intracranial hemorrhage (ICH) and frequently require reduction of the international normalized ratio (INR) to control hemorrhage, decrease morbidity and mortality and allow for neurosurgical intervention. Commonly, recombinant factor VIIa (rFVIIa) is used to reduce the INR quickly to facilitate neurosurgical intervention; however, the optimal dose of rFVIIa has been debated. The objective of this review was to evaluate the effect of a fixed low-dose rFVIIa on warfarin reversal. We report a case series of 17 patients with ICH who received fixed low-dose rFVIIa to reverse warfarin coagulopathy. All patients were treated with either 1mg or 1.2mg rFVIIa. The mean age was 73.5 ± 11.3 years and 35% were male. The mean INR was 2.6 ± 0.8 at baseline and 1.14 ± 0.3 one hour after rFVIIa administration. Fixed low-dose rFVIIa failed to reverse the INR to less than or equal to 1.5 in 3/17 patients. There was no significant difference between patients who achieved INR reversal less than or equal to 1.5 versus those who did not achieve reversal in regards to bleeding complications (p=0.331), modified Rankin score (p=0.658) and Glasgow Outcome Score (p=0.658). Overall, 94% of patients had a poor clinical outcome defined as Glasgow Outcome Score 1-2. 94% developed severe neurological outcome defined as modified Rankin score of greater than 1 at discharge and 100% of patients were classified as poor clinical outcome according to Barthel Index of less than 94. Overall, fixed low-dose rFVIIa was effective in reducing the INR to normal range. Regardless whether the goal INR was achieved after low-dose rFVIIa administration, no difference was found in bleeding complications or functional outcomes. Although 14/17 patients survived to hospital discharge, clinical outcomes remained poor.

SEVERE MYCOPLASMA PNEUMONIAE INFECTION WITH EXTENSIVE UPPER AIRWAY INVOLVEMENT REQUIRING PROLONGED EXTRACORPOREAL MEMBRANE OXYGENATION

Mandi Hopkins, Gregory Montgomery, Riley Hospital for Children, Department of Pediatric Critical Care, Vinit Patel, Firas Rabhi, Riley Hospital For Children

Case Reports: Mycoplasma pneumoniae (MP) accounts for up to 50% of community-acquired pneumonia in adolescents. Although MP can cause varying degrees of illness, progression to acute respiratory distress syndrome (ARDS) is exceedingly rare, and concomitant involvement of the upper airway has not been reported. We report a case of MP progressing to refractory ARDS and extensive tracheobronchial disease, requiring prolonged extracorporeal support. To our knowledge, this is the only report of ARDS complicated by extensive upper airway disease secondary to Mycoplasma. A 17-year-old female with a history of trisomy X, fetal alcohol syndrome, and mild asthma presented to the local hospital with chest pain on deep inspiration, a productive cough, a low-grade fever and headache. A CXR showed no acute findings. She was discharged home on co-trimoxazole and prednisone for presumed asthma exacerbation and asked to follow up in 5 days. Upon follow-up, she presented with dyspnea and wheezing, associated with poor appetite and fever to 105 F. A CXR showed bilateral multilobar infiltrates. She was admitted locally for IV antibiotic therapy, but her respiratory status progressed to hypoxemic respiratory failure. She was intubated and transferred to a tertiary care center, where, over the ensuing 4 days, her respiratory status continued to deteriorate to fulminating ARDS unresponsive to broad-spectrum antibiotics, and standard ARDS therapy. She was subsequently cannulated for veno-venous ECMO, with immediate improvement in oxygenation. Flexible bronchoscopy revealed extensive intubating of tracheal mucosa extending into the left main stem bronchus. The presence of MP was confirmed by PCR. Although oxygenation stabilized, the extensive tracheobronchial disease progressed to extensive edema and eventual sloughing of tracheobronchial walls, precluding extubation. Weekly bronchoscopy was performed to follow upper airway healing. Patient was ventilated after 22 days and extubated 6 days later. The combination of severe upper and lower airway disease secondary to MP is very rare. Veno-venous ECMO is an ideal supportive therapy for support of oxygenation as well as allowing time for airway healing.

ALTEPLASE: NON SURGICAL STRATEGY FOR SEVERE PULMONARY EMPYEMA TREATMENT

Mariana Middelhoff, San Juan City Hospital, Anabel Puig-Ramos, UPF-School of Medicine, Gilberto Puig, San Jorge Children’s Hospital

Case Reports: Case of 6-week-old male patient presented to Emergency Room with history of cough for 5 days, quantified fever of 38ºC for 2 days, and mild respiratory difficulty with negative RSV and influenza test. Patient was admitted with diagnosis of bronchiolitis and clinical sepsis. After 24 hours, he developed moderate respiratory distress with associated pleural effusion, being admitted to the Pediatric Intensive Care Unit for cardio-respiratory support. Patient deteriorated and developed a spontaneous left pneumothorax for which a chest tube was placed and treated with targeted therapy for Staphylococcus as the principal pathogen. Pleural fluid analysis confirmed empyema and a culture positive for Staphylococcus aureus. Pleural effusions turn quickly from an exudative to a fibrinopurulent stage. Due to enormous pleural effusion was not resolved, a second chest tube was placed for drainage. Patient's condition begins to improve after two doses of alteplase (0.1 mg/kg) diluted with normal saline for a final concentration of 1 mg/ml. The procedure for administration of the therapy includes: infusion of alteplase through chest tube and clamping during 1 hour. During that hour, patient was moved laterally with vibratory movement to improve area of distribution of medication and to improve its efficacy as well. After this, an increase of fibropurulent fluid drained by the chest was observed. Twenty-four hours later, we administered a second dose of alteplase which contributed to obtain a fluid drainage of less than 40 ml per day during the next 5 days. Our patient underwent chest radiograph approximately 3 weeks after resolution of symptoms, showing a complete resolution of parapneumonic effusions without residual pulmonary injury. Despite the improvement in the technology available for diagnosing and treating empyema, the management of empyema in children remains controversial. Fibrolytic therapy with alteplase was effective with limited side effects difference with video-assisted thoracic surgery (VATS), which in turn is an alternative tool for scenarios where there is no immediate availability of a thoracic surgeon and/or equipment.