

**Findings:** Patients were two days to eight years old. Esophageal atresia was the most frequent disease among patients receiving IV intralipid infusion (8.3%). Mean hours of catheter survival were significantly lower in patients who were receiving intralipid 20% ( $48 \pm 17.32$  vs  $86 \pm 19.7$ ,  $p < 0.001$ ), while duration of hospitalization was insignificantly different among two groups ( $p = 0.48$ ).

**Conclusion:** Concentration of intralipid infusion in pediatric patients receiving parenteral nutrition might be associated with intravenous catheter ablation.

**Keywords:** Pediatric intensive care unit, Parenteral nutrition, Intralipid, Catheter

### ★ Association of sleep disordered breathing and metabolic syndrome in obese children: a case control study ★

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**Background:** Obesity and biochemical parameters of metabolic disorders, both closely related to obstructive sleep apnea (OSA). The aim of this study was to compare sleep disordered breathing in obese children with and without metabolic syndrome.

**Methods:** 42 children with metabolic syndrome were selected as case group and 38 children without metabolic syndrome were matched for age, sex and body mass index as control group. The standardized Persian version of BEARS and Children's Sleep Habits Questionnaires were completed and polysomnography was performed for all study subjects. Scoring was performed using the manual of American Academy of Sleep Medicine for children. Data were analyzed using Chi-square test, T-test and Mann Whitney U test.

**Findings:** NREM sleep and N1 stage in the case group were significantly longer than the control group, while REM sleep was significantly shorter. Waking after sleep onset (WASO) was significantly different between two groups. Severe obstructive sleep apnea (OSA) was more frequent in subjects with metabolic syndrome whereas mild OSA was more frequent in subjects without metabolic syndrome.

**Conclusion:** Obese children with metabolic syndrome had increased WASO, N1 sleep stage and severe OSA. More longitudinal studies are needed to confirm the association of metabolic syndrome and OSA.

**Keywords:** Metabolic Syndrome X, Obesity, Obstructive Sleep Apnea, Sleep Stages, Polysomnography

### Air leak syndrome in a 1.5 years old girl

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**Background:** Air leak syndrome includes conditions of pneumothorax, pneumomediastinum and subcutaneous emphysema. It may occur in premature newborns with respiratory distress syndrome or patients managed with ventilator. In older children, it was seen in asthmatic patients, acute bronchiolitis and foreign body aspiration. It can be spontaneous too.

**Case presentation:** our patient was a 1.5 years old girl that suddenly had developed neck soft tissue edema. There was history of minor chest trauma 2 days ago. The patient admitted and observed. After 2 hours neck edema progressed to superior of the chest. She had fever, irritability, and no respiratory distress. There was crepitation on neck palpation. she did not have any disease in past history. Chest X-ray and lung CT-Scan presented left pneumothorax, pneumomediastinum and subcutaneous emphysema. In lab tests ESR=105, CRP=3+ and blood culture was negative. Bronchoscopy was normal. Chest tube was placed for her. Wide spectrum antibiotic was started too. After 13 days, she discharged while she was well.

**Conclusion:** Air leak syndrome may develop without underlying disease in children but sometimes occurs follow chest trauma. These patients should be hospitalized because this syndrome can result in tracheal or venous compression and death.

**Keywords:** air leak syndrome pneumothorax, emphysema, pneumomediastinum

### The "all-in-one" lung biopsy: a novel, quick, scar less, and less costly technique

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**Background:** Lung biopsy is the gold standard for diagnosis of Interstitial lung disease and changes the management in up to half of patients. Video-assisted thoracoscopic surgery (VATS) is the standard procedure for surgical lung biopsy in adult and children large enough to use endostapling device but in smaller patient thoracotomy must be done. Children who must undergo lung biopsy may be poor risk for surgery and anesthesia in whom our minimally invasive surgery technique may be done under local anesthesia and through small incisions like chest tube stab wounds. We discuss a hybrid technique for lung biopsy in 3 patients with one 3 mm port and no stapling device.

**Cases Presentation:** We successfully performed lung biopsy by these novel technique in 3 patients. The patients was 2, 5 and 8 months old . lung biopsy was requested because of the possibility of interstitial lung disease. Surgical technique: Under general anesthesia with OTT (orotracheal tube) in lateral decubitus position a 5 mm incision performed in 6<sup>th</sup> intercostal space in right anterior axillary line. Then a 3mm port was introduced and CO2 insufflations performed at 5mmhg pressure .lung and chest cavity inspected by 3mm lens and no localized lesion was fined. Then a 3mm atraumatic grasper was introduced to chest cavity through the same incision and middle lobe of lunge was grasped and pulled out of through the chest wall port incision. The remaining of the operation was performed as open lung biopsy and 3 pieces was obtained and lung was repaired by vicryl sutures .Then the lung pushed back to chest cavity. the port and lens was introduced again to check the hemostasis and air leak .At the end of the operations 10sf chest tube was inserted through the same incision and fixed. Two days later chest tube was removed without any problem. This operations was done easily in almost 20 minutes without thoracotomy through tube thoracostomy incision.

**Conclusion:** Single port thoracoscopy assisted lung biopsy can be a good way for lung biopsy in infants with least complication and excellent results.

**Keywords:** lung biopsy, thoracoscopy, laparoscopy