

## SPOT DIAGNOSIS (IMAGE GALLERY)


**SUBCUTANEOUS EMPHYSEMA AND SPONTANEOUS PNEUMOMEDIASTINUM IN A TODDLER**

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A 15 month old female child presented with fever, vomiting and diarrhea for 4 days followed by severe respiratory distress and swelling of chest after a violent bout of vomiting. On examination, she was febrile, had tachypnea and tachycardia with subcutaneous emphysema (SCE) with positive rice crispies sign (palpatory feel of tissue paper to detect subcutaneous emphysema) and a crunching, rasping sound synchronous with the heartbeat heard over the precordium in the left lateral position suggestive of spontaneous pneumomediastinum (SPM). Systemic examination was normal. Chest X ray showed bilateral pneumonitis, extensive SPM and SCE without pneumothorax. CT thorax confirmed these findings. The patient got some relief of SCE by skin incisions and improved gradually.

**What is the diagnosis?**

Hamman syndrome (Macklin's syndrome) consists of spontaneous subcutaneous emphysema (SCE) and spontaneous pneumomediastinum (SPM), without pneumothorax. It is rarely reported in young children. Incidence of SPM is around 3 per 1000 children presenting with asthma. (1) Causes of Hamman syndrome are (a) valsalva maneuvers, (b) severe broncho-pulmonary infections, asthma, and pandemic (H1N1) influenza, (c) foreign body ingestion, (d) Boerhaave syndrome and (e) Thoracic or dental surgery. Very often etiology remains unknown. (2) It is easily confused with potentially lethal Boerhaave syndrome which is spontaneous rupture of the esophagus after vomiting. Clinical presentation include sudden onset of cough, SCE, remarkable chest pain, sore throat, voice change, odynophagia, swelling of the neck, pain in neck, chest, dysphagia, dyspnea, respiratory distress and air leak to parts of the trunk and limbs. Diagnosis is confirmed by X-ray chest PA and lateral view (2) showing air streaks outlining mediastinal structures, especially around cardiac landmarks. Serial X-rays are not recommended. CT chest is considered the gold standard for diagnosis of SPM and while contrast CT chest may be needed in Boerhaave syndrome on suspicion of esophageal rupture and mediastinitis. (2) Conservative management and treatment of primary cause are the mainstay of treatment of Hamman syndrome. However in presence of severe respiratory distress, measures like multiple skin incisions at the level of thoracic inlet, placement of subcutaneous drain and high flow oxygen therapy are employed. (2)

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**References:**

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2. Caceres M, Ali SZ, Braud R, Weiman D, Garrett HE Jr. Spontaneous pneumomediastinum: a comparative study and review of the literature. *Ann Thorac Surg.* 2008; 86: 962-966



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