



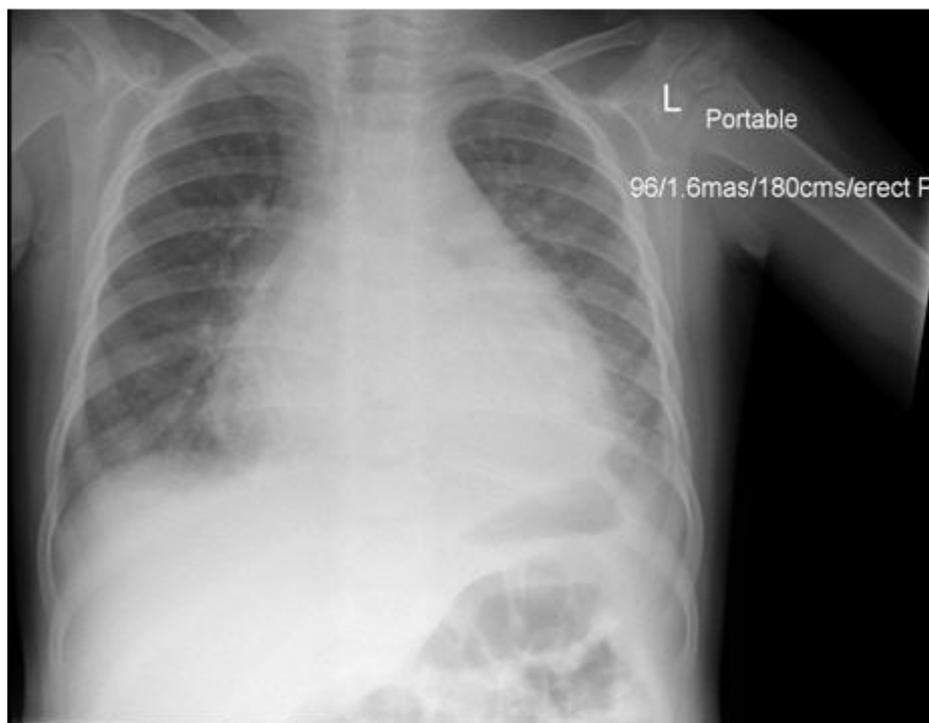
A medical emergency following chicken pox

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A 2½-year-old girl presented to our paediatric unit with fever and shortness of breath. She was febrile and ill-looking. She was short of breath with an elevated respiratory rate of 48 breaths per minute. She had an extensive healing crusted rash of chicken pox on her torso. She had a regular heart rate of 160 beats per minute. The pulse was of normal volume.

On auscultation no pericardial rub or murmur was detected. Air entry was reduced on the left base laterally. The liver edge extended to 6 cm below the margin of the right rib cage.

Diagnostic work up showed white cell count of 26,000 cells/cmm with a left shift, ESR 75. Blood culture showed no growth. Troponin level was normal. An electrocardiogram demonstrated widespread upwardly concave ST segment elevation. Augmentin 50 mg/kg and aciclovir 10 mg/kg were initiated intravenously. Flucloxacillin was added later. She had maintenance fluid along with supplemental oxygen via nasal cannulae. Chest radiograph is shown below.



The chest radiograph shows an enlarged cardiac silhouette with a cardiothoracic ratio of 67/134 cm. Subsequent echocardiogram showed a global 1.5 cm thick circumferential collection of fluid in the pericardial sac.

Our patient was transferred to a specialised cardiac unit, where 200 ml of pericardial fluid aspirated under echocardiographic guidance. Culture of the fluid gave a pure growth of *Staphylococcus aureus*. She was given flucloxacillin 50 mg/kg intravenously for 6 weeks via a peripherally inserted central venous catheter. A pigtail catheter kept in the pericardial sac produced another 50 ml of fluid giving a total of 250 ml. She remained tachycardic with persisting hepatomegaly and a further echocardiogram revealed persisting pericardial collection, more gelatinous, along with significant diastolic dysfunction suggesting constrictive physiology.

Anterior pericardectomy was performed 2 weeks after the initial pericardial tap. Perioperatively a significant amount of fibro-purulent material was evacuated and the chest was irrigated with antibiotic solution. Echocardiography after this revealed a significant improvement in diastolic function along with a drop in heart rate.

Her subsequent recovery was uneventful and 1 month post discharge echocardiogram has been completely normal.

Discussion

Varicella is a vaccine-preventable common infectious disease, usually benign in children. Occasionally it may be complicated by cardiac involvement. Other possible complications include cellulitis, necrotising fasciitis, septicaemia, encephalitis, arthritis, pancreatitis, cerebellar ataxia, osteomyelitis, and extensive pneumonia needing ventilatory support.

Complications associated with bacterial super infection (*Streptococcus pyogenes* and *Staphylococcus aureus*) is the most common reason for hospitalisation of children with chicken pox.^{1,2} Possible cardiac involvement ranges from subclinical ECG changes to endocarditis, myocarditis, fulminant cardiac failure, pericarditis with or without tamponade.

Respiratory distress following chicken pox indicates the need for radiological investigation. If the cardiac silhouette is enlarged it is important to consider a pericardial collection particularly when associated with characteristic electrocardiographic changes.

Pericardial effusion is a potential medical emergency which can be treated promptly by initial needle aspiration under echocardiographic guidance. Delay in diagnosis and treatment could be fatal.

If the fluid is a clear transudate and is sterile prolonged antibiotic treatment may not be necessary.

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