Subcutaneous Emphysema and Pneumothorax Following Measles

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Measles is one of the commonest childhood infections in developing countries carrying a considerable morbidity and mortality, especially in malnourished children(1). Although, respiratory complications like bronchopneumonia, bronchiolitis and bronchitis are well known, occasionally obstructive lesions of the lower respiratory tract may occur leading to pneumothorax and subcutaneous emphysema(2). I report a similar case occurring in a 20-month-old girl.

Case Report

A 20-month-old girl presented with fever, cough and rhinorrhea of 7 days duration. On the day before admission, erythematous maculopapular rash, suggestive of measles, was noticed. There was associated cough with rapidly increasing dyspnea. There was no history of any drug intake before admission. The patient had not received measles vaccine earlier. On examination the child was febrile, showed a generalized maculopapular rash, respiratory rate of 64 per minute with intercostal recession. A diagnosis of measles with bronchopneumonia was made. Two days later the cough increased and was associated with hoarseness of voice. On the same day swelling of the upper part of the chest, neck and face was noticed with increasing respiratory distress. On palpation crepitus was felt over the swollen areas. Breath sounds were diminished on the left side and fine crepitations with few expiratory rhonchi were heard on ascultation. The chest *X*-ray revealed bilateral subcutaneous emphysema of neck and chest along with pneumomediastinum (*Fig. 1*). The child was treated with parenteral ampicillin, paracetamol and oxygen inhalation by hood; oxygen inhalation was discontinued on the 4th day. The subcutaneous emphysema gradually subsided after 7 days.

Discussion

Subcutaneous emphysema and pneumomediastinum are rare complications following measles(2). The incidence of this complication varies from 1.8-2.5% among African children(3,4). Bloch and Peter Vardy(5) reported 4 such cases during a measles epidemic in northern Israel. Moreover, Miller in a study of 53,008 cases of measles did not report this complication. Bose and Bhattacharya(2) have reported a single case with this complication among 482 children of measles. Similarly, Chaturvedi *et al.*(7) have reported their experience with 4 such cases.

It is proposed that increased recognition of pneumomediastinum and subcutaneous emphysema is related to improved diagnostic facilities and awareness of the condition(8). Cases not suspected clinically may occasionally be revealed on radiography(5). The precise mechanism of pneumomediastinum and subcutaneous emphysema occurring in measles is not clear. During the severe coughing in measles, forced expiratory efforts may obstruct the systemic venous return and increase the intrapulmonary pressure. Both these factors in the

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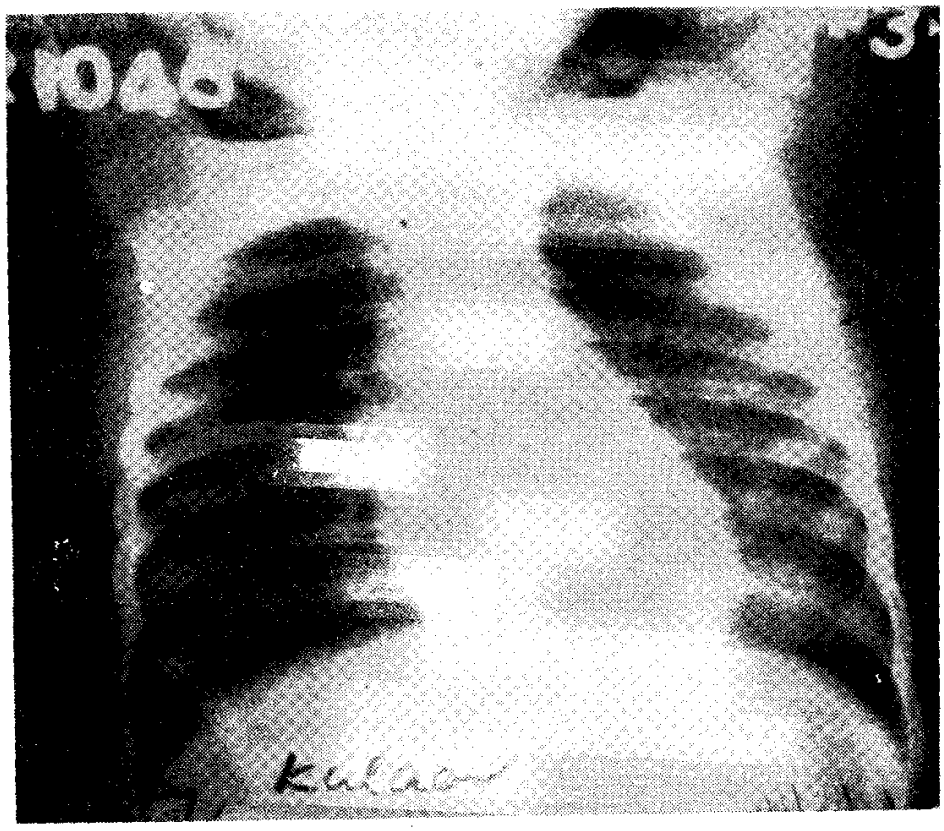

Fig. 1. X-ray chest AP view showing bilateral subcutaneous emphysema of neck and pneumo mediastinum.

presence of infection may lead to rupture of the alveolar wall(5).

Clinicians should be aware of this complication and need to diagnose such cases early in order to decrease the morbidity and mortality due to the condition.

REFERENCES

1. Morley D. Severe measles in the tropics. Br Med J 1969, 1: 297-300.
2. Bose R, Bhattacharya NL. Subcutaneous emphysema and pneumothorax – a rare complication in measles. J Assoc Physicians India 1986, 34: 291-292.
3. Amin NM, Anokbongoo WW, Williams PN. Subcutaneous emphysema as a complication of measles. East Afr Med J 1972, 49: 346-354.
4. Kimate VP, Layul B. Measles complications as seen at Mwanza regional consultant and teaching hospital in 1973. East Afr Med J 1976, 53: 332-340.
5. Bloch A, Vardy P. Pneumomediastinum and subcutaneous emphysema in measles. Clin Pediatr 1968, 7: 7-10.
6. Miller DL. Frequency of complications of measles. Br Med J 1964, 1: 275-278.
7. Chaturvedi P, Elzouki AA, Chaturvedi VN, Mathur NB. Subcutaneous emphysema complicating measles. Indian Pediatr 1987, 24: 595-597.
8. Macklin MT, Macklin CC. Malignant interstitial emphysema of the lungs and mediastinum as an important occult complication in many respiratory diseases and other conditions. Medicine (Baltimore) 1944, 23: 281.