SURGERY IN THE MANAGEMENT OF THE COMPLICATIONS OF MEASLES: OBSERVATIONS IN KUMASI, GHANA

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ABSTRACT

The role of surgery in the management of complications of measles has been highlighted with three cases-observations at the Komfo Anokye Teaching Hospital, Kumasi, Ghana, as follows:

(1)concurrent osteomyelitis of a rib, pyo-pneumothorax, pyo-pneumoperitoneum has been successful treated with simultaneous thoracotomy and laparotomy, as well as underwater seal drainage and sequestrectomy.

(2)strictures and stenosis of the mouth have been amenable to release of contracture and cheiloplasty.

(3)massive subcutaneous emphysema which can be associated with ectropion of the eyelids can heal spontaneously without surgery if not concomitant with pneumothorax.

Keywords: measles, osteomyelitis, pneumoperitoneum, surgery.

INTRODUCTION

The advent of immunization has rendered measles uncommon in some parts of the world (6). In others, however, the disease still remains a problem and might be responsible for 10% of all deaths among African children (10). Patients who acquire the illness still have classic symptoms, and complications (3, 4, 8, 15, 16), which were seen prior to the attenuated virus vaccine. The management of both measles rash and its complications has remained chiefly medical (16, 17).

This paper presents for discussion three (3) complications of measles observed at the Komfo-Anokye Teaching Hospital, Kumasi, from 1986 to 1988 and which were referred to the surgeon for further mangement since initial medical treatment had not yielded the required relief.

CASE 1:

N.Y., 9 months male presented with measles rash of 4 days duration on admission to the hospital. The head, neck and thorax were grossly enlarged, and with palatable crepitus in the subcutaneous tissue of the same body regions. There was also ectropion of both lower eyelids (fig.1), and the patient had marked dyspnoea. The diagnosis of subcutaneous emphysema was made and the surgeon's opinion was sought by the paediatricians. The patient was treated with cloxacillin syrup 125mg q.i.d. for 7 days, paracetamol syrup 120mg t.d.s. for 3 days, phenergan compound 5ml for 7 days.

No surgical intervention was undertaken. After 14 days of admission, the subcutaneous emphysema resolved completely, and the patient was discharged in satisfactory general condition.

CASE 2:

A.B., 1 years, female, was referred by the paediatrician with suspected acute abdomen.

31/7/87: The patient was ill-looking with dyspnoea and flaring of the nostrils. Acute abdomen could not be confirmed. The x-ray of the chest demonstrated rightsided col-

FIG. 1: Massive subcutaneous emphysema in measles.

lapse of the lung and pneumothorax (fig.2). The patient received injection ampicillin 125mg 8 hourly and was resuscitated with I.v. fluids in preparation for underwater seal drainage, since her condition was not favourable for immediate anaesthesia and operation.

4/8/87: There was slight improvement in the general condition, but an increase in the size of the right-sided pneumothorax was observed in the chest x-ray. A bulging of the right side of the chest and abdomen with palpable subcutaneous crepitus and fluctuancy were noticed.

At operation, under intubation anaesthesia and through a right paracostal incision along the level of the 7th rib about 200ml of pus was removed. There was also necrosis of the middle portion of the 7th rib. Perforation of the diaphragm had allowed pus to enter the abdominal cavity. Sequester and necrosis were removed, the abdomen washed out and the defect in the

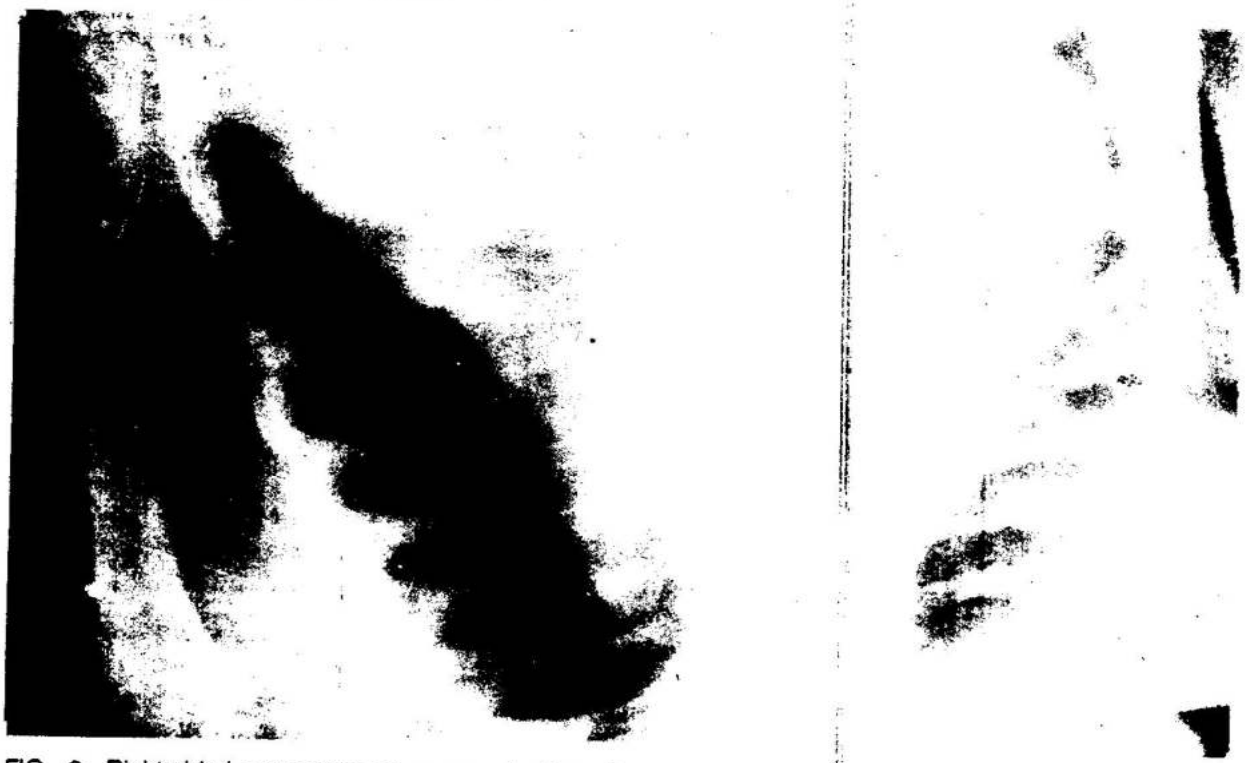

FIG. 2: Right-sided pneumothorax as complication of measles.

diaphragm repaired. An underwater seal drainage was inserted. Intraoperative diagnosis of osteomyelitis of the 7th right rib accompanied by pyo-pneumothorax, pyo-pneumoperitoneum, perforation of the diaphragm and subcutaneous emphysema was made.

5/8/87: The chest x-ray showed maximally unfolded right lung with the drainage tube in position. The condition of the patient improved tremendously. 14 days after the operation, the child was dischargeed in satisfactory general codition.

8/1/88: A little over 4 months after the two cavity operation, the child was still in good general condition. The chest x-rav demonstrated well aerated right lung and sclerotic rest 7th right rib (fig. 3).

FIG. 3: The same patient as in Fig. 2. Notice the rest of right 7th rib after sequesterotomy.

CASE 3:

M.A. 1 3/4 years, female, presents with inability to open the mouth and limited intake of solid foods since the healing of a sore mouth after a measle rash. She had been treated on an outpatient in an outward health post. According to the mother, the child has since become difficult and her speech has been impaired. The child would yell and cry unnecessarily and avoided the public. The mother herself was disorganised and worried.

On examination, M.A. was in a satisfactory general condition, except that there was scar and discoloration of the skin at both angles of the mouth (fig.4). The opening of the mouth was narrow. The diagnosis of postmeasle mouth contracture and stricture was made. A first attempt at anaesthesia for release of the contracture was abandoned, because of intubation difficulties. 4 weeks later, the second intubation attempt was successful and cheiloplasty performed. The child is a lively one 2 months after the operation and opens the mouth readily (fig.5). Further cosmetic retouching might be necessary at a later age.

DISCUSSION:

In a reaction (17) to a paper on "Subcutaneous emphysema in measles (16)", the author recollected no case of complications of measles where surgery had been indicated. This may be valid for the chief complications of measles such as otitis media, pneumonia and encephalitis (3), which are basically inflammatory processes

FIG 4: Complication of measles - bilateral contracture and stricture of mouth.

FIG. 5: The same patient as in Fig. 4 two months after cheiloplasty.

following the initial virus disease. These do respond well to conservative and medical treatment (15, 16, 17). Other complications for example pneumothorax and pneumatocele (16) may also and eventually be treated conservatively (16, 17), if the life of the patient is not acutely threatened. Subcutaneous emphysema, when not accompained by pneumothorax, though alarming is seen as a benign condition which can also resolve under control of infection with antibiotics (15) as well as suppression of cough and careful monitoring of the patient with the complication (12, 14).

There is however, the indication that infliction of pain through giving of injections to such patients can aggravate emphysema or pneumothorax complication measles and thereby lead to sudden death (1).

Unsuccessful medical treatment has been the reason to involve the surgeon in the management of the complications of measles reported in this paper. The 5 - 7 days interval between the onset of the measles rash and the appearance of the complication as found in the present series is similar to that of others (16).

Subcutaneous emphysema has been mentioned as a complication of measles in a number of publications (7, 15, 16, 17). Our patient (Case 1) despite the association of the condition with bilateral ectropion of the eyelids survived through medical and conservative treatment. Surgery was not necessary. In case 2, however, the initial broncho-pneumonia developed not only into emphysema, but finally into osteomyelitis of a rib, pneumothorax, perforation of the diaphragm and pneumoperitoneum with acute abdomen. The pneumothorax and the subcutaneous emphysema in this patient is seen as a result of a respiratory tract rupture proximal to the alveolus, as has been suggested elsewhere (17). The cause of the osteomyelitis is thought here to be necrosis, which might have been secondary to purpura fulminans or disseminated intravascular coagulation as has been suggested for noma of the cheeks complicating measles (3). However, this as well as the perforation of the diaphragm could have arisen *per continuitatem* from the more common broncho-pneumonia in patients with measles. This patient was treated with a two-cavity surgery at one sitting, which included sequestrectomy, repair of the diaphragmatic perforation and underwater seal drainage of the thorax.

In an unpublished data, the present authors have also successfully treated less severe pneumothorax and pleural effusion in measles with intermittent aspiration of fluid and air out the pleural space using ordinary syringes.

The contracture and stenosis of the mouth in case 3 of the present communication might have had the same or similar pathogenesis as has been described for noma of the cheek (3), but it is also suggestive of exuberant scar formation on the healing of aphthae or gingivitis, which are common in malnourished children with measles. Irrespective of the actual or precipitating factors, this condition which appeared after measles has been amenable to excision of the hypertropic scar and cheiloplasty.

The three observations reported here, therefore, underline that surgery can be necessary for some complications of measles, and this especially for life threatening conditions such as massive pneumothorax and or acute abdomen with perforation of the diaphragm and pneumoperitoneum. Devastating disfigurement resulting from contractures and stenosis of the mouth is

also amenable to aesthetic surgery. These surgical proceedures do not however generally rule out conservative medical treatment for complications in measles. Antibiotic cover as recommended elsewhere (14) should accompany any surgical interventions directed at complications of measles.

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