

simple failure to maintain independent existence even with the full support of social services, but incontinence and mobility are preserved, and there is no significant behaviour disturbance, admission to a local authority welfare home will be appropriate. Old people in need of this may have little insight and may not accept this course. In such cases the social worker's skills will be

needed to gain the old person's acceptance. Where incontinence, behaviour disturbance, or immobility make hospital care the necessary alternative, the choice between psychiatric or geriatric admission will be determined by the balance of behaviour disturbance on the one hand and immobility or associated physical illness on the other.

## *Surgery of Violence*

# Report on Injuries Sustained by Patients Treated at The Birmingham General Hospital Following the Recent Bomb Explosions

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### Summary

As a result of recent bomb explosions a total of 82 patients were treated at the Birmingham General Hospital, 61 with minor injuries. Bomb injuries may be divided into three main groups due to the blast effect (such as blast lung and ruptured tympanic membranes), the flash (such as burns to the exposed part of the body), and shrapnel (which may cause a wide variety of injuries). The amount of warning of such explosions is usually minimal, and so the prepared accident schemes of most hospitals are inappropriate. If the disaster occurs outside normal working hours much responsibility initially falls on the resident staff. This report gives some idea of the type of injuries they are likely to see.

### Introduction

On the evening of 21 November 1974 two bombs exploded in two crowded public houses in the centre of Birmingham. Eighty-two patients were seen and treated in the General Hospital. Of these, 61 were suffering from minor injuries and were discharged after treatment in the accident department. Twenty patients were admitted, one of whom, suffering from extensive burns, was immediately transferred to a burns unit, where he subsequently died. One further patient died in the accident unit.

Of the 19 patients admitted none subsequently died, and the following is an account of their injuries and immediate management.

### Report of Cases

#### CASE 1

On admission this patient, a 21-year-old female, was found to be hypotensive and to have the following injuries: (a) Penetrating wound

left lower abdomen with prolapsing intestines; (b) large wound with marked tissue loss left upper arm; (c) multiple facial lacerations; and (d) multiple shrapnel wounds to leg, scalp, and left upper arm.

She was taken to the theatre after resuscitation and laparotomy was performed. Blood and bowel contents were found in the peritoneal cavity. A large piece of shrapnel had entered the abdominal cavity low in the left iliac fossa and had traversed upwards, ending in the lumen of the stomach. Two perforating injuries were also found in the ileum and in the transverse colon. These were treated by excision and anastomosis. Peritoneal toilet was performed and the abdomen closed with drains. The entry wound on the abdominal wall and the large area of tissue loss in the upper arm were treated by excision, and the wounds packed. X-ray of the leg showed a piece of shrapnel in the upper tibia.

#### CASE 2

On admission this patient, a 22-year-old female, was shocked and required immediate resuscitation. She had sustained: (a) Open fracture of skull involving the frontal sinus, containing various wood and bone fragments; (b) open fracture of left tibia with extensive soft tissue damage containing much debris; (c) multiple facial lacerations and bilateral perforating eye injuries; (d) flash burns to exposed parts; and (e) additional minor lacerations.

In the theatre excision of her wounds was carried out and the fractured tibia supported in plaster-of-Paris. Some of the wood fragments were removed from her eyes, and the frontal sinus was cleaned and packed. Dressings were applied to the burnt areas.

#### CASE 3

On admission this patient, a 27-year-old male, was complaining of severe dyspnoea, with pain on breathing and a persistent desire to cough. He was restless with marked tachypnoea. His pulse was 120, and the blood pressure was 90/70 mm Hg. Both sides of his chest were moving equally, with good air entry in all areas without added sounds. He was also suffering from superficial flash burns to both lower legs and the face, the former being grossly contaminated by wood and metal fragments driven in by the blast. At this time it was commented that he appeared more shocked than his injuries suggested, but no other cause could be detected. In particular his abdomen was soft and pain-free on palpation. Chest x-ray showed "blast lung" (fig. 1) injury, and he was curarized, intubated, and ventilated. Hydrocortisone and antibiotics were begun. Two pints (1.1 l) of blood was given. Six hours later his blood pressure, which had recovered initially, showed a fall. This was accompanied by a rising pulse. No

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