Ballbearing-bomb injuries

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British Medical Journal, 1976, 1, 310-311

Summary

Ballbearings from terrorist bombs produce entrance wounds remarkably similar to those caused by bullets. This may be a source of confusion to both surgeons and pathologists.

Introduction

In mid-November 1975 terrorist bombs in London were found to be loaded with ballbearings and other pieces of metal such as nuts and bolts. Such missiles had not been seen in

FIG 1—Entrance wound in right chest made by ballbearing from bomb that exploded about 4.5 m away.

FIG 2—Entrance wound made by 0.303-calibre bullet from automatic weapon fired from about 4.5 m.

FIG 3—X-ray film showing ballbearing in left acetabulum and shorn-off bolt head lying free in the pelvis.

Northern Ireland by the end of that month. This paper records the type of injury caused by ballbearings because of the remarkable similarity of the entrance wounds to those caused by bullets fired from orthodox weapons.

Injuries

The characteristic punched-out hole (fig 1) surrounded by a ring of de-epithelialised dermis is virtually identical with the picture of a shot from, say, a 0.303-calibre weapon (fig 2) fired a considerable distance from the body. Ballbearings have a high initial velocity, which is thought to be quickly lost. In

FIG 4—0.22-calibre bullet carried by blood stream from aorta to femoral artery.

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one case there were seven entrance wounds and five exit wounds, only two ballbearings being recovered from the body. One had lodged in the anterior abdominal wall, and the other in the body of the fifth lumbar vertebra.

In a second case a ballbearing had entered through the ninth rib in the mid-axillary line and, flying through the dome of the diaphragm and the liver, had torn across the right ventricle to be recovered from the left chest. A second ballbearing had entered through the right buttock, had shattered the ilium, and was recovered from the thickness of the left acetabulum

(fig 3). These missiles were about 6 mm in diameter. The one in the acetabulum was extremely difficult to identify owing to the thickness of the acetabulum (about 7 mm). X-ray pictures are essential in such cases, and usually the bomb squad require every piece of metal to be recovered. Furthermore, such missiles may be carried by the blood stream from one part of the body to another (fig 4).

In shooting there is generally some aim taken and some expected direction of fire, but in terrorist bomb explosions the direction of flight of objects such as ballbearings is random.

IgA Deficiency in one of identical twins

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British Medical Journal, 1976, 1, 311-313

Summary

A disease resembling childhood coeliac disease occurred in one of identical twins. When the twins were investigated at the age of 23 the initial diagnosis could not be substantiated but the twin who had been ill had selective IgA deficiency. Differences dating from early infancy may have been a result of the discordance for IgA deficiency. Thus in some patients environmental influences may be important in either the initiation or the perpetuation of the deficiency.

Introduction

Several gastrointestinal disorders, including gluten-sensitive enteropathy and some less clearly defined malabsorption syndromes, sometimes occur in association with IgA deficiency.^{1,2} Either a causal relationship or a common pathogenesis might account for the association.³ We report here the occurrence of selective IgA deficiency in one of identical twins associated with an illness which in childhood superficially resembled coeliac disease. As the twins were identical in almost all other respects the "coeliac-like" syndrome was probably a consequence rather than simply a concomitant of the IgA deficiency.

Case report

Girl twins both weighed 3.46 kg at birth in 1951. Shortly after weaning to cereals at three months one twin (twin 1) started to vomit after feeds and thereafter she thrived less well than her sister. At six months both twins had an acute diarrhoeal illness; this was mild in twin 1 but much more severe in twin 2, who was admitted to hospital.

The failure of twin 1 to thrive continued and she was first seen when aged 33 months with a nine-month history of persistent vomiting after

FIG. 1—Twin 1 (left) and twin 2 at 4½ years. Twin 1 is smaller in height and has some abdominal distension.

feeds, intermittent abdominal distension, and loose offensive stools. There was a severe hypochromic anaemia and initial findings were consistent with the clinical diagnosis of coeliac disease. A gluten-free diet was advised, but her bowel symptoms had improved before this was started and her parents discontinued the diet after eight months. Throughout childhood twin 1 lagged behind in growth (fig 1): at eight years she had a radiological bone age of 6 years and was 4.5 kg lighter and 8 cm shorter than her twin. Twin 1 had repeated sore throats and tonsillectomy was performed when she was 10. When she was 13 twin 1 complained of occasional cramp-like pain, but diarrhoea was no longer a symptom. The weight difference was now 6.5 kg, and twin 1, unlike her sister, showed no evidence of secondary sex characteristics. Jejunal biopsy performed at 13 years showed partial villous atrophy with round cell infiltration of the lamina propria and intraepithelial lymphocytes in the mucosa of twin 1 (fig 2). There was no evidence of giardiasis. The biopsy appearances in twin 2 were normal. Twin 1 resumed gluten restriction for a further 18 months, during which the occasional abdominal pain resolved but the growth disparity increased. Menarche occurred at 15 years 6 months in twin 1, 18 months later than in twin 2.

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