

Wounded in Action, 6 July 1944, near Castellani, Italy, by American artillery fire

Admitted to 12th General Hospital, 8 July 1944, from 56th. Evac. Hosp.

Died, 14 July 1944, of pulmonary fat embolism, and acute pulmonary edema, as a result of his wounds.

This 27 year old German soldier received severe wounds of the right and left thighs, right forearm, right buttock, and face, and compound fracture of right tibia and right femur. Debridement was done at the 56th Evac. Hosp., where sulfonamide was liberally used, a hip spica was applied, and 1200 cc of blood plasma administered. He arrived at the 12th Gen. Hosp., mildly septic and with an hematocrit of 25%. 500 cc of group specific blood were given and on the 5th day after injury the mildly infected wounds were dressed in the operating room. A mild swinging temperature persisted after operation and penicillin was started. On the second post-operative day 4000cc of normal saline was given intravenously and a few hours later death occurred quietly and suddenly.

The salient features of the postmortem were:

" Removal of a hip spica reveals a compound comminuted fracture of the right medial femoral condyle, extending into the tibial tuberosity. There has been widespread exposure and considerable loss of the tendinous insertion of the hamstrings about the fractures. The right posterior thigh and adjoining gluteal fold have suffered extensive tissue loss, including the superficial muscle groups. The right forearm has a basswood splint, removal of which discloses a fracture of the ulna and radius with internal comminution. In none of the wounds is there any suggestion of gangrene or of gas formation; there is, however, some superficial pyogenic exudate in all major areas involved.

The lungs are encased in dense woody adhesions which necessitate sharp dissection to free them. Trapped between the scar tissue and visceral pleura are loculi of serous fluid. Absence of a thrombus in the pulmonary artery having been established, the lungs are removed. The right one weighs about 500 grams. It is crepitant throughout, but on section shows a marked diffuse edema. The hilar structures are not remarkable. The left lung weighs about the same as its mate, and presents the same appearance. The parenchyma of both seems rather pale.

Lung (4 sec): These show a variable degree of pulmonary edema, many megakaryocytes in the alveolar capillaries (making the latter appear unusually cellular), and in some of the larger vessels there are punched-out holes in the masses of blood which are suggestive of fat vacuoles. Two frozen sections stained for fat are striking. The larger pulmonary rami in some areas of the sections are simply crammed with fat. There is so much of it in some vessels that they look like red sausages. The distribution of the fat is not generalized but tends to be aggregated massively in various foci. The major portion of the alveolar capillaries are free of it. This is as severe a fat embolism as I have seen. Because so much of it is in the larger vessels, it is assumed that its occurrence is a recent event.

The brain should have been investigated in this case; possibly fat could have been demonstrated there also.

Clinical Diagnoses:

- (1) Lacerated wound, severe, right thigh, left thigh, right forearm.
- (2) Fracture, compound, complete, right tibia and femur.
- (3) Penetrating wounds, multiple, face and neck.
- (4) Perforating wounds, severe, right thigh and right buttock.
- (5) Operation: debridement of wounds; hip spica.

Pathologic Diagnoses:

- (1) Pulmonary fat embolism, massive.
- (2) Acute pulmonary edema.
- (3) Acute right heart dilation.
- (4) Fractures, compound, complete, of medial condyle of right femur.
- (5) Fractures, compound, complete, of right tibial tuberosity.
- (6) Extensive tissue loss about (4) and (5).
- (7) BB fracture, right forearm.
- (8) Lacerated wounds, severe, of left thigh, right forearm, right thigh and right buttock.
- (9) Multiple superficial wounds of face and neck.
- (10) Pleuritis, bilateral, extensive, ancient.
- (11) Perisplenitis, and perihepatitis, ancient, extensive.
- (12) Chronic splenitis.