[redacted] Pvt. [redacted] Med. Bn.
Wounded in action 14 July 1944 by enemy landmine explosion in Italy.
Admitted to 12th. Gen. Hosp. 19 July 1944 from 94th. Evac.

Died: 19 July 1944 - Fat embolism, acute pulmonary edema, transfusion nephropathy as result of his wounds.

This 23 year old Medical soldier sustained multiple wounds of both hands and forearms, the left buttock and both lower extremities with compound fracture of the right femur. He received plasma and anti-gas serum at an aid station and then was debrided at the 94th. E.H. A spica cast was applied. Four units of blood were ordered but transfusion was stopped after 850cc had been given because of a severe reaction, following which the urine showed 4 plus albumin, hemoglobin and red cells. Penicillin plasma, intravenous glucose and anti-gas serum were administered. On arrival in poor condition at 12th. Gen. Hosp., the patient was in pain and the temperature was 103 degrees F. He was taken at once to the operating room and 1000cc of "O" blood (type specific) was started. The wounds of the right thigh were found to be extensively infected and gas bubbles were seen in the tissues. An amputation was planned. The patient died while on the fracture table after about one hour of ether oxygen anesthesia and while receiving the transfusion.

Salient features of the Autopsy were as follows: 3,4,5.

A. There are multiple extensive soft tissue wounds of both lower legs and thighs, with exposure of muscle. They bear a superficial pyogenic exudate. The right femur is fractured at the junction of its lower and middle thirds, and is partially compounded internally. The left buttock is the site of severe wound with much loss of the gluteus maximus and medius. There are multiple penetrating soft tissue wounds of both arms. The tissues about the fractured femur exude a moderate amount of foul-smelling gas on pressure.

B. The right pleural space contains about 400cc of straw fluid; a considerably less amount is present on the left. Neither lung is collapsed. The pericardial sac contains about 20cc of straw fluid. The heart weighs 300 grams. The pulmonary conus is prominent and the right ventricle is about twice normal size. The left ventricle is normal in thickness. The endocardium is smooth. All valves are within normal limits of measurement. The coronary rami are unchanged.

C. The left lung weighs 600 grams. The parenchyma is rather diffusely consolidated, this being due to an extensive edema which involves all lobes. The stem bronchi contain frothy edema fluid. The only other gross feature of note are the subpleural petechiae and ecchymoses which stud the surfaces of both lobes. The right lung weighs about 700 grams and in all essentials resembles the description of its mate.

D. The kidneys total about 400 grams. They appear externally to be swollen. The capsules separate readily and show a pale yellow-white cortex. On section the usual architecture is revealed, but the kidneys are pale and the parenchyma of the medulla bulges.

E. Lung (7 sec): There is a striking diffuse pulmonary edema in all sections. Of wide occurence are masses of intra-alveolar red cells, in some instances enmeshed in fibrin strands. The alveolar capillaries are all congested. Some of the smaller vessels have a dew-drop appearance and a fat stain shows a well-marked pulmonary fat embolism. Postmortem thrombi are noted in some vessels.

F. Kidney (3 sec): There is a well-marked hydronephrosis. Masses of granular acidophilic pigment are found in the collecting tubules; these casts yield a positive peroxidase reaction. In addition, scattered cellular casts are noted in the distal convoluted tubules. A rare intersitial granuloma is also present.

G. Skeketal muscle (3 sec): These show a more or less focal necrosing myositis with reactive polynuclear change. Cultures from the involved areas yield only gas-forming saprophytes.

H. The death of this patient I regard as a culmination of several factors: the existence of partial (though evidently not complete) urinary obstruction, the presence of widespread pulmonary edema under anesthesia (mechanism debatable), and the existence of considerable fat embolism. To this must be added toxemia and sepsis from necrotic tissue in his numerous wounds, particularly those about the right femur.

Clinical and Pathological diagnoses were as follows:

CLINICAL DIAGNOSES

(1) Multiple soft tissue wounds, severe, both legs and left buttock.
(2) Multiple soft tissue wounds, both arms.
(3) Compound fracture of right femur.
(4) Sepsis
(5) Possible gas gangrene, right thigh.

PATHOLOGIC DIAGNOSES

(1) Hemoglobinuric nephropathy
(2) Blast pneumonitis, healing
(3) Pulmonary edema, diffuse, severe
(4) Pulmonary fat embolism, moderately severe
(5) Sulfonamide nephropathy, minimal
(6) Focal suppurative myositis, right thigh, with local gas
(7) Compound fracture of right femur
(8) Wounds, severe, of both lower legs, thighs, left buttock, both hands and both forearms.
(9) Toxic splenitis
(10) Old and recent venepuncture wounds, both anticubital fossae.