

The fatty mass present at the caudal end of the spinal cord should not be regarded as a lipoma. It is likely to be a developmental anomaly and not a true tumour. Such fatty masses are not uncommonly found in association with spina bifida occulta. Ingraham and Swan (1943) reported its occurrence in 13 out of a series of 65 cases of spina bifida occulta.

Clinically the lesson to be learnt from this case is the necessity for excision of all congenital dermal sinuses found at or above the sacral level. Preferably this should be done before infection occurs, and certainly if, as in this case, there is a history of the sinus having reddened or discharged.

### Summary

A fatal case of a congenital dermal sinus in the sacral region communicating with the spinal cord is recorded. Associated anomalies included spina bifida and a spinal cord extending into the sacral canal. Death was due to staphylococcal meningitis, infection probably having occurred through the sinus tract.

The importance of early excision of any sinus in the region of the spinal cord is emphasized.

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Since the beginning of the Eye Bank for Sight Restoration in New York six and a half years ago 2,469 eyes have been given to it (*New York Times*, December 13). When the bank was started there were only 15 surgeons in the United States who were able to perform the operation of corneal grafting; the bank has now trained several hundred to do it, and has linked over 150 hospitals in the country. It is now possible to fly an eye many hundreds of miles and perform the operation all within the 48 hours that the eye "lives." Presenting the sixth annual report of the bank, Mrs. Aida de Acosta Breckenridge, the executive director, said that the demand is still far in advance of the supply, but the public in America is responding well. As well as supplying eyes, the bank is the only clinic in the world that supplies vitreous.

## USE OF TANTALUM GAUZE IN REPAIR OF LARGE GUNSHOT WOUND OF CHEST REPORT OF A CASE

BY

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Tantalum gauze has been used widely for some time now in the repair of recurrent and ventral herniae, but to my knowledge has not been employed in thoracic surgery.

In the following case the gauze was used in a dire emergency, but it is thought that other applications of the method, in either elective or traumatic surgery, might develop from this experience.

### Case Report

The patient, a healthy 42-year-old farmer, was admitted to hospital at 7.30 a.m. on March 3, 1950. He was a known but well-controlled diabetic who, after a matrimonial upset, had attempted to commit suicide at about 6 o'clock the same morning. For this purpose he employed a 12-bore shotgun and aimed at his heart. Fortunately his knowledge of anatomy was scanty, for he placed the muzzle of his gun just below and medial to the left nipple. The entrance wound inflicted was about 3 cm. in diameter and showed typical powder burns around its circumference. The exit wound was situated in the left axilla and measured roughly 15 cm. across. The surrounding skin, ribs, and muscle were reduced to a pulp by the force of the explosion and left a gaping hole in the chest wall, through which the collapsed and slightly bruised lung could be seen. Prior to admission his family doctor had applied an occlusive dressing of petroleum jelly to both wounds, given him morphine,  $\frac{1}{4}$  gr. (16 mg.), and transported him some 40 miles (64 km.) by ambulance.

On admission his condition was critical; he was virtually exsanguinated, with a pulse that was barely palpable and a blood pressure which could not be recorded. Without delay a transfusion of reconstituted plasma was started, typing for whole-blood transfusion carried out, and a fresh occlusive dressing applied to close the open pneumothorax, for the original one was leaking badly. By 9 a.m., after he had received 500 ml. of plasma and an equal quantity of whole blood, his blood pressure had reached 80/30 mm. Hg and pulse 120. At this stage it was decided to send him to the operating theatre.

### Operation

Under positive-pressure gas, oxygen, and ether anaesthesia, the chest was shaved, scrubbed with soap and water, and draped. Once débridement was begun the wound looked even more ugly than had been thought originally, for virtually two-thirds of the pectoralis major and a considerable quantity of the latissimus dorsi muscles were so contused as to be non-viable and therefore required excision (Fig. 1). The third, fourth, and fifth ribs were completely shattered for a length of 10 cm. in their axillary portion and necessitated removal, while the sixth and seventh were fractured, but, fortunately, retained their blood supply in good order. Examination of the lung showed no lacerations and no evidence of external bleeding, although considerable bruising was present around the fissure. Once the excision and débridement had been completed there remained a hole at least 12 cm. in diameter, over which, at best, a thin already bruised skin flap could be fashioned once relaxation incisions had been made. Such flaps, with a precarious blood supply, were doomed to rub over the broken ends of the ribs and be subjected to the incessant flapping concomitant with respiration.

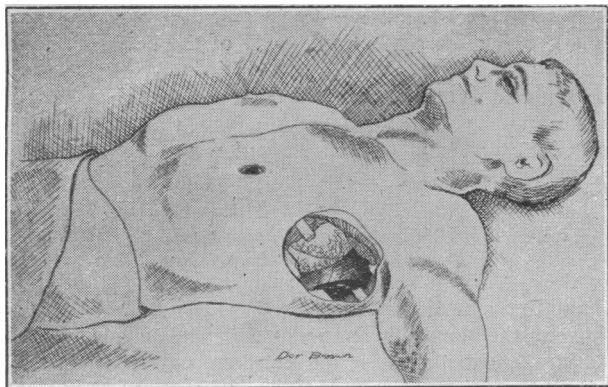


FIG. 1.—An artist's impression of the original injury as seen at operation.

At this stage, and in a spirit of desperation, it was decided to use tantalum gauze in an attempt to effect closure. While the mesh was being sterilized by boiling, haemostasis was secured, the pleural cavity was mopped dry, and all remaining fragments of bone and as many shot as possible were removed. A piece of mesh 18 cm. square was selected and the edges were turned over to give a better grip for the tantalum wire sutures. This mesh was then sutured to the remaining ribs and intercostal muscles. Any remnants of muscle that could be found were sutured over the edge of the mesh, so that the skin flap would have a smooth bed on which to ride with respiratory excursions. This procedure proved very effective, for the mesh has a flat smooth malleable surface and could be moulded satisfactorily. A large rubber drain was inserted into the pleural cavity through a counter-incision in the seventh intercostal space in the posterior axillary line. The skin flaps were then approximated, under considerable tension, sutured in place with interrupted silk sutures, and an occlusive dressing was applied with adhesive tape.

During the operation another 1,000 ml. of whole blood was transfused, and the patient left the operating theatre at 11 a.m. in fair condition and with a blood pressure of 70/30.

#### Post-operative Course

The patient was treated in an oxygen tent for four days. The pleural cavity was aspirated immediately after operation and 300 ml. of blood removed, after which the drainage tube was connected to an under-water seal. Two further whole-blood transfusions of 500 ml. each were given during the course of the day and he was started on antibiotic therapy, using procaine penicillin, 300,000 units twice daily, and "aureomycin." For the first 24 hours the aureomycin was given in 100-mg. doses intravenously every six hours, but thereafter he was able to take 250-mg. capsules three times a day by mouth.

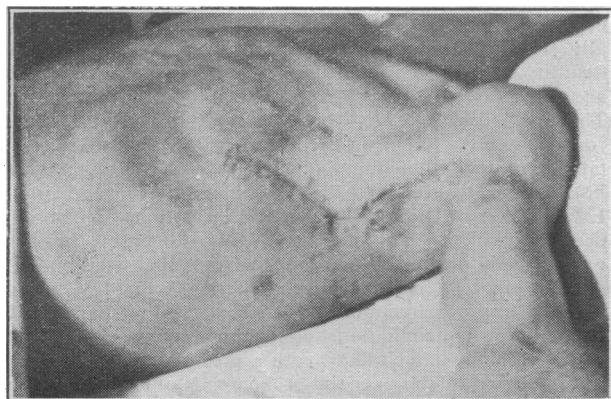


FIG. 2.—The end-result on the fourteenth post-operative day.

During the first three post-operative days the only complication was the expectoration of some blood, and the occasional blockage of his drainage tube with blood clots. However, these did not cause any serious trouble and there was no difficulty in controlling his diabetic state with insulin, diet, and appropriate intravenous therapy. He was taken out of the oxygen tent on the fourth day and his drainage tube removed on the seventh day. On the eleventh day, when his dressing was removed, it was gratifying to find first-intention healing. His sutures were therefore taken away. He was discharged on the fourteenth post-operative day in good health and spirits. The only permanent disability was the limitation of abduction of the left arm to 90 degrees — this being attributed to the shortening of the pectoral muscles (Fig. 2).

#### Investigations

Radiographs of the chest were taken on the fifth and ninth days of his post-operative course, and these showed progressive re-expansion of the lung, with the return of the mediastinum to its normal position (Figs. 3 and 4). Physical examination of his chest before discharge showed that the "new wall" moved, but did not flap with respiration and was no obstacle to auscultation. There was an area of dullness at the left base extending up to the sixth rib in the mid-axillary line, but respiratory excursion was almost equal to that on the right side. Over the "new wall," which was firm and solid, the percussion note had a resonance equal to that over the remainder of the anterior chest, and the breath sounds were of a pure vesicular type.

#### Follow-up

On May 8 the patient was in excellent health and able to perform light work involving the use of his left arm. Abduction of the left arm was limited to a little over 90 degrees, but all other ranges of movement were practically normal. He had suffered some intermittent pain in the area of the axillary wound, but most of this is diminishing and has been attributed to the healing fractures of the



FIG. 3.—Radiograph of chest five days after operation.

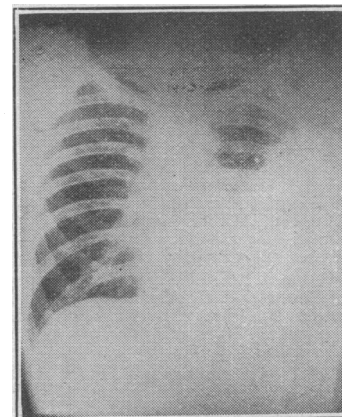


FIG. 4.—Radiograph of chest on ninth post-operative day.

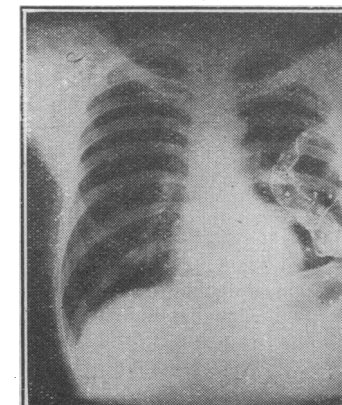


FIG. 5.—Radiograph of chest two months later, showing tantalum implant and absence of pleural reaction adjacent to it, but some diaphragmatic elevation.

fifth and sixth ribs, which showed callus formation. The wound was well healed and firm, and did not show any paradoxical movements with respiration. A radiograph of the chest (Fig. 5) showed a clear lung field, but slight elevation of the diaphragm owing to adhesions. There was no pleural thickening adjacent to the wound. The physical findings were essentially normal over the whole chest and no abnormalities in the heart could be detected.

An electrocardiogram was taken, and particular attention paid to the leads over the tantalum implant. All tracings showed no abnormalities of the heart or pericardium and there were no changes attributable to the metal implant.

### Summary and Conclusions

A case is presented in which tantalum mesh was used to repair a large gunshot wound defect of the chest.

Tantalum mesh is eminently suitable for use in potentially infected chest wounds to effect closure, and, provided supportive antibiotic therapy is employed, it is possible to obtain primary closure.

Tantalum mesh has no demonstrable effects on the electrical charges or their transmission from the heart as recorded by electrocardiography.

I would like to thank Dr. Henry Lee for his co-operation and permission to publish this report, and Miss Dot Brown for the drawing.

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## THROMBOCYTOPENIC PURPURA COMPLICATING INFECTIOUS MONONUCLEOSIS

BY

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The occurrence of thrombocytopenic purpura with infectious mononucleosis is rare. Tidy (1934) stated that he had found only five recorded cases of infectious mononucleosis complicated by purpura; in one case the thrombocytes were lowered, and in the others the platelets were not estimated. More recently Angle and Alt (1950), in addition to reporting a case of thrombocytopenic purpura complicating infectious mononucleosis, reviewed the literature on this subject. They found only six detailed reports of a definite association between thrombocytopenic purpura and infectious mononucleosis, and twelve other cases in which the two conditions were possibly associated. This series included not only those cases in which the thrombocytopenic purpura paralleled the attack of glandular fever, but also two case reports in which a pre-existing haemorrhagic diathesis was exacerbated by an attack of infectious mononucleosis.

When glandular fever is associated with thrombocytopenic purpura the disease is often first diagnosed erro-

neously as acute leukaemia, the correct diagnosis being made either after a belated study of the heterophil antibody titre of the patient's serum or in retrospect, when the patient has recovered from the illness. A report of a case of infectious mononucleosis complicated by thrombocytopenic purpura may therefore be of interest.

### Case Report

A 28-year-old man was admitted to hospital on November 24, 1950, complaining of "blood spots" in his mouth and small dark spots on his body. He had been in good health until one week previously, when he developed a headache and generalized aches and pains. Two days before admission he noticed some "blood spots" on his lips and in his mouth, and that his sputum was streaked with blood. The following day he observed that the glands in his groins were swollen, and on the morning of the day of admission he cut himself repeatedly while shaving, the bleeding from these multiple cuts being difficult to stop. About the same time he noticed numerous small dark spots scattered over his body.

There was no recent history of a sore throat or of other haemorrhagic symptoms, such as epistaxis, haematuria, or intestinal bleeding. There was no previous or family history of haemorrhagic or allergic conditions.

On admission his temperature was 98.2° F. (36.8° C.), pulse rate 90, and respirations 15 a minute. There was no jaundice; the conjunctival mucosae were of a good colour and the ocular fundi were normal. The fauces were injected, but showed neither exudate nor membrane. Numerous purpuric spots were seen on the lips and on the inside of the cheeks; similar lesions were present on the lateral margins of the tongue, and a large haemorrhagic bleb was seen at the junction of the hard and soft palate. The trunk and limbs were blemished by a widespread petechial rash, the legs being affected the most. The tonsillar, cervical, supraclavicular, axillary, inguinal, and femoral lymph nodes were either slightly or moderately enlarged. The lymph nodes were discrete and, with the exception of the right tonsillar node, were neither tender nor painful. The spleen was enlarged, extending two fingerbreadths below the left subcostal margin; it was soft in consistence and not tender to palpation. The liver was not enlarged. The heart, lungs, and central nervous system were normal. The blood pressure was 108/60 mm. Hg. The urine and stools showed no macroscopic abnormality.

*Investigations.*—Examination of the blood on admission showed: Hb, 90% (Haldane), or 12.4 g. per 100 ml.; red cells, 5,100,000 per c.mm.; colour index, 0.88; white cells, 15,000 per c.mm.; platelets (Lempert's method), 10,000 per c.mm. A differential white-cell count showed: neutrophil polymorphs, 2,175 per c.mm. (14.5%); lymphocytes, 5,400 per c.mm. (36%); monocytes, 150 per c.mm. (1%); eosinophils, 75 per c.mm. (0.5%); basophils, 75 per c.mm. (0.5%); and atypical mononuclears, 7,125 per c.mm. (47.5%). The atypical mononuclears were oxidase-negative and showed the typical features of "glandular fever" cells. The stained blood film confirmed the marked thrombocytopenia. The bleeding-time (Duke) was longer than 10 minutes. The clotting-time (Dale and Laidlaw) was two minutes. The erythrocyte sedimentation rate (Westergren) was 6 mm. in one hour. The heterophil antibody test (Davidsohn) was positive in a serum dilution of 1:1,024. The bone marrow was not examined. The diagnosis was infectious mononucleosis complicated by thrombocytopenic purpura.

### Course and Treatment

During the first two days in hospital the patient's condition showed little change. He was slightly febrile—maximum temperature 99.4° F. (37.4° C.)—on November 25, and, although his temperature was normal on the following day, the fever returned on November 27 (three days after admission). On that day "aureomycin" therapy was started; 750 mg. was given six-hourly to a total dose of