

SURGERY IN A GENERAL HOSPITAL IN JAPAN WITH THE BRITISH COMMONWEALTH OCCUPATION FORCE.

BY

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THE first three months of the British Commonwealth Occupation of Japan has proved of great interest surgically for, during this time, 380 major and minor operations, of which 238 were accident cases, have been performed in this hospital.

The hospital is the largest in the Force. It is so composed that it can deal with cases of every kind from each nationality. The patients have thus been Army, Navy, Air Force, Merchant Navy and Women's Services from Britain, Australia, New Zealand, India and, on occasion, from the U.S.A.

Situated in the old Japanese Naval Hospital overlooking the harbour of Kure, which used to be Japan's largest and most secret naval base, it has mountains and sea for its setting but close around are shattered and fire-scarred ruins. Ten miles away is the skeleton of Hiroshima where the first atomic bomb fell nearly a year ago.

The construction of the hospital is a strange contrast of modern and old-fashioned architecture and design. The operating theatre block and some of the wards and departments are modern, others are of wood and plaster at least sixty years old. Many alterations are still in progress for a typhoon recently swept away several buildings and the scars of bomb and fire can still be seen. The plumbing, electricity and steam heating are an inefficient mimic of the Western world and they seldom function together in harmony at one and the same time.

CLINICAL WORK.

This paper deals only with general surgery and orthopædics, which have been very varied in scope. Routine cold surgery has been very interesting as have the ordinary surgical emergencies. Many of the accident cases have been severe and have arisen from causes varying from numerous motor accidents to an exploding ashtray in an Officers' Mess supposedly the work of a Japanese saboteur.

On one occasion, a train struck a truck full of Australian troops resulting in 17 direct admissions and eight minor casualties. Two soldiers died from multiple injuries after this catastrophe.

More than 690 patients have passed through the surgical division in the last three months with an overall mortality of less than 1 per cent.

Thirty cases that were unlikely to be fit for full duty within three months have been evacuated to their home countries.

Four interesting and instructive cases resulting from accidents will now be described, followed by two relatively uncommon general surgical cases.

These are :—

ACCIDENTS.

- (1) Traumatic diaphragmatic hernia.
- (2) Rupture of the liver.
- (3) Rupture of a hydronephrotic horseshoe kidney.
- (4) Compound depressed fracture skull.

GENERAL.

- (1) Volvulus of cæcum.
- (2) Acute intestinal obstruction due to a wire bristle.

ACCIDENTS.

(1) TRAUMATIC DIAPHRAGMATIC HERNIA.

14.5.46 : L/Cpl. E., aged 21, whilst driving a jeep was involved in an accident causing the steering wheel to hit him in the abdomen.

Condition on Admission.—T. 98 ; P. 84 ; R. 20. He was feeling sick suffering from abdominal pain and dyspnoea.

On Examination.—Head and Neck : No signs of injury except that his lips were slightly cyanosed.

Chest : Apex beat two inches inside nipple line. Sounds normal. Trachea shifted to right.

Right Lung : Normal.

Left Lung : Breath sounds and percussion note normal at apex. No breath sounds left base—percussion note impaired. Borborygmi heard above diaphragm.

Abdomen : Abrasions left loin and over left lower ribs and left iliac fossa. Slight guarding left hypochondrium.

Limbs : Normal. Reflexes normal. Urine normal. Treated in bed in Fowler's position. Hourly pulse chart. Fluids only by mouth.

X-ray : Plain. 16.5.46 : "The stomach and splenic flexure of colon are visible in the left thorax at the level of the fourth rib anteriorly. There is marked displacement of the mediastinum to the right. The appearances are those of a large diaphragmatic hernia of the left leaf diaphragm."

Seen by O.C. Medical Division who confirmed diagnosis but advised that operation be postponed unless the general condition deteriorated.

17.5.46 : Patient vomiting and distressed, more cyanosed and the respiratory rate has increased to 40 per minute. So operation decided upon and preliminary blood transfusion commenced.

Anæsthesia, endotracheal oxygen and cyclopropane and controlled respirations, maintained during the operation.—A. S. B.

17.5.46 : *Operation.*—The patient was placed on his right side. An incision from the costal cartilages anteriorly to within 1½ inches of the spinous processes was made between the 7th and 8th ribs. One inch of the posterior part of each of these ribs was removed and the pleura opened. Most of the stomach and transverse colon was found in the thorax and the left lung was collapsed. A stomach tube was passed and the stomach and intestine were returned to the abdomen. A large triangular tear 4 inches long antero-medially and 2 inches long posterolaterally in the medial portion of the diaphragm

extending to its posterior attachment was repaired with nylon thread in two layers. At this stage there was some cardiac distress owing to mediastinal displacement. The chest was rapidly closed, sucked dry, and the lung insufflated by the anaesthetist. 50,000 units penicillin were instilled into the pleural cavity, dressings were applied and the patient returned to the ward.—J. A. V. N.

18.5.46 : General condition satisfactory.

20.5.46 : Large left pleural effusion diagnosed and confirmed by X-ray.

21.5.46 : Aspiration of 400 c.c. amber-coloured fluid. Penicillin instilled.

Aspiration was repeated on 23rd and 25th. Penicillin instilled.

1.6.46 : Chest screened.—Diaphragm high on left side and not moving. Small localized effusion present.

5.6.46 : Patient doing breathing exercises well, afebrile and feeling quite well.

14.6.46 : Patient has been up two days.

X-ray : Further re-expansion of lung has taken place. No fluid seen.

18.6.46 : Brought before a medical board so that he may be evacuated to U.K.

Result of Medical Board.—“Category Evac. for return to U.K.”

3.7.46 : Further X-ray chest showed still further re-expansion of lung which is now nearly normal in appearance except for some pleural thickening and a raised diaphragm.

10.7.46 : Embarked on hospital ship as a walking case.

The following case is of interest since conservative treatment has again produced complete recovery in what was obviously a fairly severe rupture of the liver. Thus bearing out wartime experience.

(2) RUPTURE OF THE LIVER.

Driver L., aged 19, was involved in a severe jeep crash on 14.5.46, and was brought in unconscious. He soon recovered consciousness but complained of severe pain in lower right side of chest and upper right side of abdomen. Also difficulty in breathing.

On Examination.—Pupils equal and react normally. T. 97°; P. 110; R. 25. Grazes all over face—one black eye—severe laceration of lower lip. Apex beat normal situation—rhythm normal.

Chest : Breath sounds present and similar both sides—tender on pressure fore and aft between hands over lower five ribs.

Abdomen* : Very tender and rigid right upper quadrant. Bowel sounds present.

Limbs : Normal.

Urine : Normal.

Diagnosed Rupture Liver : Half-hourly pulse.

Patient too distressed and shocked to have an operation to repair the lip.

Penicillin injections 20,000 units three-hourly.

Pulse-rate persisted just around 120 per min.

15.5.46 : Abdominal pain and rigidity persist; physical signs the same. Tender and rigid upper right quadrant; bowel sounds present. Still very ill but not deteriorating.

16.5.46 : Slight improvement but all signs the same. Pulse 110; T. 99.6°.

18.5.46 : Off penicillin, very much better, but still pyrexia up to 100°. Hæmoglobin 90 per cent.

26.5.46 : Complained of sharp pain in right side of chest and cough. Worse on breathing—signs of large pleural effusion. Confirmed by X-ray.

28.5.46 : One pint dark amber fluid aspirated from chest.

31.5.46 : Further 26 oz. clear amber fluid withdrawn.

2.6.46 : Patient much easier.

9.6.46 : X-ray shows effusion all absorbed.

28.6.46 : Patient well; getting up. Healed scar of lip excised and resutured.

10.7.46 : Patient quite well awaiting discharge to Convalescent Depot.

*X-ray chest in bed : Slight elevation right diaphragm. Nil else abnormal. Not screened.

(3) RUPTURE OF A HYDRONEPHROTIC HORSESHOE KIDNEY.

26.5.46: Driver C., aged 22, was admitted at about 21.00 hours in a very comatose condition from a field ambulance. The military police had found him two hours earlier, having apparently been involved in a road accident. The field ambulance had diagnosed "a ruptured kidney on the right side," the patient having passed 400 c.c. of nearly pure blood *per urethram*. On admission, when he could be roused, he denied having been in an accident and said "I have always had a 'crook' right kidney and have had the same trouble before two years ago." However, he admitted that he had had a scrap and might have been hit in the loin.

On Examination.—Breath, alcohol + +. No signs of bruising or abrasions. Tender and rigid right loin. Passed more pure blood. Pulse 80 but rising. Still very drowsy. Stomach washed out.

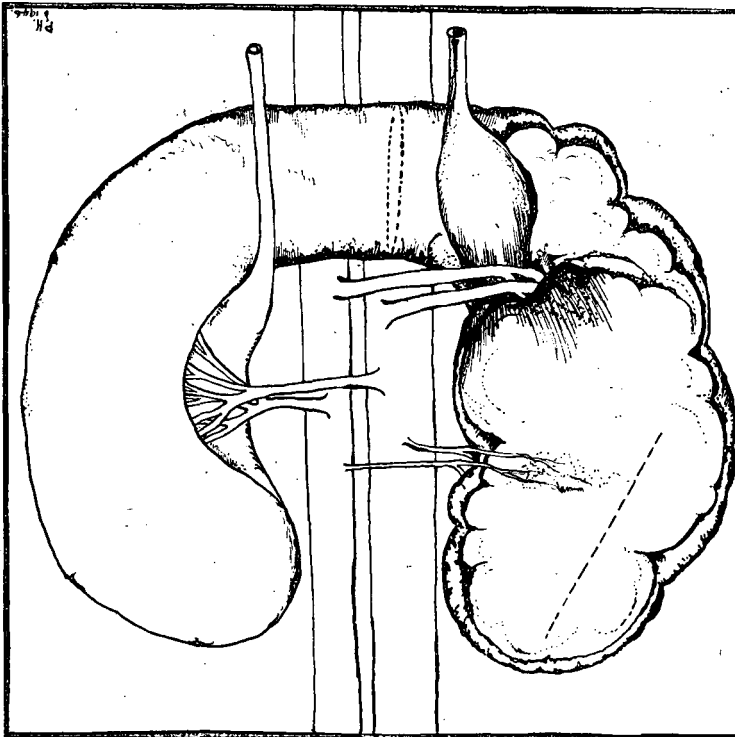
Chest: Normal. No other signs of injury.

Put on half-hourly pulse-chart.

At 23.00 hours pulse was 110 and operation was decided upon.

Preliminary blood transfusion 1 pint of blood given by drip and continued throughout operation.

Anæsthetic: Gas, oxygen and ether. Endotracheal.—A. S. B.



The horseshoe kidney is diagrammatically portrayed above to demonstrate the following points:—

- (1) Marked hydronephrosis right side, both of renal pelvis and kidney proper.
- (2) Double blood supply with large aberrant vessels constricting the right renal pelvis, the vessels passing in front of the ureter.
- (3) The line of section made through the isthmus.
- (4) The site and size of the rupture.

Operation.—Right subcostal lumbar incision (*see* Diagram).

At first no kidney could be felt but then a soft hollow viscus was felt and ureter traced to it. The upper pole could be made out but the lower pole extended across the vena cava and aorta to the other side—where normal kidney substance was felt in continuity. On delivery of the upper pole of the right kidney it was seen to be a sac full of dark blood with the pelvis and ureter dependent from it.

The ureter was clamped and divided and the right half of what was then recognized to be a horseshoe kidney was freed except for its pedicle and attachment to the other side.

The renal vessels which were smaller than normal were clamped and divided. The lower pole was then divided between clamps cutting through normal kidney substance. This was oversewn and all bleeding stopped.

The wound was closed in layers leaving a rubber drain emerging through the posterior angle of the wound.—J. A. V. N.

On examining the hydronephrotic half removed, it was found to have a tear 2 inches long on its inner aspect and was full of blood. There was a minute portion of normal kidney substance near the upper pole and for half an inch proximal to the line of division at the lower pole.

27.5.46 : Passed urine only slightly blood stained—condition fair.

28.5.46 : Urine clearer, some discharge from tube—general condition good.

1.6.46 : Urine almost free of blood—tube out—wound healthy. Patient suffering from a cough. Some atelectasis present.

10.6.46 : Wound healed, sutures out, cough better.

16.6.46 : Urine clear, albumin — ve, sugar — ve. No blood, acid.

B.P. 120/87. Patient getting up.

Brought before a medical board with a view to evacuating him to Australia.

X-ray intravenous pyelogram.—" Good excretion of dye. The appearances are typical of one half of a horseshoe kidney."

(4) COMPOUND DEPRESSED FRACTURE OF THE SKULL AND FRACTURED PELVIS.

Sapper A., aged 25, was admitted on April 16, 1946, half an hour after the jeep he was driving struck a train.

He was semi-comatose and restless. There was a transverse wound four inches long across the frontal region, showing fracture of the outer table, a deep laceration of the (R) cheek and severe contusion in the region of the (R) iliac crest.

Pupils were equal, constricted, and reacted slightly to light. There was spasticity of the (L) lower limb and the (L) knee-jerks and ankle-jerks were brisker than the (R). Both plantar responses were extensor. Blood-pressure was 130/100 and pulse-rate 96 per minute. There was a non-recent fracture of the (L) clavicle.

Eighteen hours after admission operation was undertaken.

Premedication atropine gr. 1/100 thirty minutes before operation.

The anaesthetic was induced with pentothal. The patient was intubated and the anaesthetic maintained with cyclopropane and oxygen.—A. S. B.

(1) The frontal wound was excised. A transverse guttered depressed fracture of the frontal bone was found. Entry was made into the skull by the removal of small depressed fragments, all of which were removed, including a considerably displaced portion of inner table. The dura was intact. Shortly, depressed portion of brain became elevated to its normal position and commenced to pulsate. Some extradural bleeding was arrested with muscle grafts and closure effected in two layers, with drain.

(2) The laceration of the (R) cheek was excised and sutured. E.S.

For ten days after operation, the patient remained semicomatose and restlessness was controlled by means of intramuscular paraldehyde. Feeding was effected through a Ryle's tube. The plantar responses varied from time to time. The spasticity of the (L) lower limb disappeared, and the (R) lower limb became spastic.

X-ray showed: (1) Linear fractures extending in three directions from the skull defect. (2) Fracture of both pubic rami of (R) side of the pelvis of the iliac crest and of the (R) auricular surface of the ilium. Displacement was present.

Treatment of the pelvis was not undertaken because of the general condition. Seven days after operation lumbar puncture showed clear fluid at a pressure of 7.5 mm. c.s.f. containing less than one leucocyte per c.mm. Ophthalmoscopic examination showed normal optic discs. On the tenth day after operation diminutions in the depth of semi-coma was observed, the patient speaking and sometimes answering questions. Improvement continued but mental changes persisted for several weeks. The favourite posture was the knee-elbow position, and rational conversation was not possible. At the date of writing (July, 1946) all mental changes have disappeared. There is no disability from the head and face wounds. The patient is ambulant and there is a limp due to the fractured pelvis and some residual spasticity of the (R) lower limb.

GENERAL.

(1) VOLVULUS OF CÆCUM AND ASCENDING COLON.

17.5.46 : Pte. P., aged 19, was admitted complaining of epigastric pain and vomiting, commencing early this morning. Pain colicky in character with remissions, bowels open twice, loose stools, vomited several times and felt cold and shivery.

Gave a past history of having had an operation for "twisted gut" at age of 12.

Condition on admission.—Temp. 97.4; pulse 72; R. 20. Tongue slightly furred. C.N.S., nothing abnormal found.

Chest : Heart and lungs normal.

Abdomen : No marked distension or rigidity, but area above umbilicus is fuller and more uneven than normal. There is a supra-umbilical right paramedian scar from his old operation. Tender in the epigastrium.

Rectal examination N.A.D.

Diagnosis : ? recurrence of volvulus of cæcum. Not acute.

18.5.46 : Much easier. No vomiting. On fluids by mouth; for barium enema.

20.5.46 : Commenced vomiting again. Ryle's tube passed and continuous gastric suction commenced. Intravenous saline. Still no marked physical signs on palpation of abdomen.

21.5.46 : No further vomiting.

X-ray : Barium enema.

Barium passes just short of splenic flexure. Plain film shows ascending and transverse colon enormously distended. Patient prepared for operation. Blood group taken and transfusion of plasma commenced by drip.

21.5.46 : *Operation.*—Under cyclopropane oxygen. Anæsthesia.—A. S. B.

Right paramedian incision made, excising old scar. Free fluid ++. On opening peritoneum—intestine from terminal ileum to mid-transverse colon found enormously distended, twisted and partially strangulated but viable. Completely mobile cæcum. Volvulus was untwisted after delivering the twisted mass. Some adhesions round its base were resected and a blind cæcostomy was performed by inserting a rubber catheter through double purse-string sutures into the cæcum and bringing it out through a small gridiron incision in the right iliac fossa. The cæcum was sutured to the peritoneum at this point, surrounding the tube. The abdominal paramedian wound was then closed in layers.—J. A. V. N.

Post-operative intravenous therapy with one plasma to four glucose salines by drip was continued together with continuous gastric suction.

23.5.46 : Gastric suction stopped, but recommenced because patient started to vomit showing signs of paralytic ileus.

Morphia gr. 1/6 four-hourly for three doses.

26.5.46 : Patient better, cæcostomy draining, stopped suction.

1.6.46 : Abdominal wound sutures out. Tube out of cæcostomy two days ago—less discharge, diet increasing.

15.6.46 : Very little discharge—patient feeling well and getting up.

18.6.46: Patient recommended for a medical board with a view to evacuating him to Australia.

4.7.46: Cæcostomy closed spontaneously. Patient very fit.

(2) ACUTE SMALL INTESTINAL OBSTRUCTION DUE TO A WIRE BRISTLE.

On June 25, 1946, Pte. D., aged 19, was admitted complaining of severe intermittent colicky abdominal pain for the last sixteen hours. Pain was around and slightly above the umbilicus. He had vomited bile-stained fluid repeatedly during the previous six hours and had not had his bowels opened for the past two days.

Past History.—Two similar attacks, one year ago, and two days ago, but for the past year his bowels had been irregular. Constipation for two or three days followed sometimes by diarrhoea.

Condition on Examination.—T. 99; P. 100; R. 20. Patient in pain, looking anxious. Tongue furred. Tender rigid abdomen. Tenderness most marked in the middle around the umbilicus. Rectally very tender in mid-line high up. Auscultation, no bowel sounds heard.

Plain X-ray performed: No distended coils of gut seen.

W.B.C. 13,600 per c.mm.

Diagnosis.—Acute small bowel intestinal obstruction. Intravenous saline infusion commenced.

Operation.—Under oxygen cyclopropane anaesthesia—A. S. B.

Right paramedian incision. Free blood-stained fluid in peritoneal cavity and coils of almost black small intestine seen. On palpation a hard band constricting the mesentery beneath which a loop had become partially strangulated was felt. This was divided and found to consist of fibrous tissue around a wire bristle which was perforating through the wall of the ileum and was attached to another loop of ileum. The gut, on release of the band, immediately recovered its normal colour. The opening from which the bristle was removed was invaginated and oversewn with fine catgut. The appendix was removed, and the abdomen closed.—J. A. V. N.

Post-operative gastric suction by a Ryle's tube was continued with intravenous salines and plasma until the stomach contents were clear and peristalsis was resumed three days later. Since then convalescence and recovery have been uneventful.

It was suggested that the wire bristle may have come from a brush used to clean potatoes, but the patient had no knowledge of ever having swallowed it.

TABLE OF OPERATIONS PERFORMED.

Chest.

Mastectomy for gynecomastia	3
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Abdominal.

Excision fibro-adenoma	1
Heminephrectomy of a horseshoe kidney	1
Appendicectomy	28
Volvulus of cæcum	1
Hernia inguinal	13
Epigastric hernia	2
Regional ileitis	1
Small intestinal obstruction	1
Duodenal perforation	1
Epididymectomy and vasectomy	1
Repair of ruptured bulbous urethra	1

Thoraco-abdominal.

Repair traumatic diaphragmatic hernia	1
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Head and Neck.

Craniotomy	3
Laceration of scalp and face	25
Partial thyroidectomy	1
Excision of thyroglossal cyst	1
Excision of thyroglossal fistula	1
Excision rodent ulcer	1

Anal.

Rectal prolapse (Lockhart Mummery)	1
Fistula in ano	4
Hæmorrhoidectomy	18
Ischiorectal abscess	2
Fissure in ano	6
Circumcision	16

Infections of the hand

25

Orthopædic.

Recurrent dislocation of shoulder	2
Excision semilunar cartilage	8
Arthrograms of the knee	5
Excision head of radius	1
Tendon suture of hand (long tendons of thumb)	2

Burns.

Burns electric	4
Burns simple	6

Fractures.

Vertebræ	2
Upper limb-humerus	2
Upper limb-scapula	2
Upper limb-radius and ulna	2
Colles	19
Lower limb—femur	1
Compound patella	2
Tibia and fibula	3
Cuboid	1
Os calcis	3
Skull (excluding facial bones)	7

Miscellaneous.

Including lacerations, cystoscopies and pyelographies, minor infections and lesser fractures.

OTHER ITEMS OF INTEREST.

A case of osteogenic sarcoma of the clavicle was diagnosed and flown back to Australia as quickly as possible.

Varicose veins are scarcely ever seen among the Australian troops, inguinal herniæ being almost equally rare.

Numerous testicular swellings have been seen among the Indian Troops. Several have been specific, traumatic or tubercular, but the majority are difficult to label.

In spite of the large number of accidents dealt with, fractures of long bones have been very rare. This can be largely attributed to the scarcity of motor cycles in the Force.

SUMMARY.

(1) A general review of surgery with one General Hospital of the British Commonwealth Occupation Force in Japan has been given.

(2) Cases of unusual academic interest have been described, demonstrating that military hospitals in peace time can provide more interest and experience clinically than is usually credited to them.

(3) Experience in War Surgery is proving of benefit in dealing with peace time accidents.

IN CONCLUSION.

We should like to express our gratitude to those M.O.s and Sisters while working under very difficult conditions who have assisted us in steering these many cases through to recovery.

To Brigadier C. Scales, *M.C.*, for permission to submit this article, and to Colonel G. S. N. Hughes, *D.S.O.*, The Commanding Officer, for his constant help and encouragement.