Operation.

The steps of the operation were: (1) Removal of the scar of the first operation, together with some unhealthy granulation tissue. (2) Subperiosteal resection of the inner half of the clavicle. The sternal attachments of the bone were not divided, and the decorticated bone was made to pivot over to the right after being surrounded by gauze. (3) A long and tedious dissection involving the ligation and division of several veins, injury to the thoracic duct or one of its branches, from which much milky fluid escaped, and identification of the subclavian and internal jugular veins and the lower part of the scalenus anticus muscle. (4) Careful division of the scalene muscle with a small scalpel from without inwards. The fibres were divided close to the rib and very cautiously, taking especial care not to encroach on the anterior or internal portions of the muscle sheath. (5) The subclavian artery at the junction of its first and second portions was ligatured with a double strand of No. 1 Van Horn's catgut after it had been ascertained that occlusion of the artery at this point controlled the circulation in the aneurysm. (6) The displaced portion of the clavicle was fixed in position by strands of catgut passed through holes drilled in the bone, and the extensive wound closed by a series of superimposed catgut sutures, a small rubber tube being left in for seventy-two hours.

Aseptic healing followed, and beyond a small mass of cicatricial tissue no local evidence of the aneurysm can be discerned.

I am indebted to Captain J. E. Stacey for the notes of the case.

The lessons which I have learnt from a study of this case are:

1. To be prepared to meet with extraordinary difficulty in exposing the artery on account of inflammatory exudate caused by the bullet or shell fragment.

2. The value—indeed I might say the necessity—of resecting the clavicle in order to secure adequate room.

3. The advantage to be derived from dividing the scalenus anticus muscle in the way I have described. By the judicious use of small retractors after its division it is possible to draw inwards the phrenic nerve and to displace the pneumogastric and sympathetic nerves, together with the other important structures lying to the inner side of the muscle, and so reach the distal part of the first portion of the artery.

BLOOD PRESSURE IN WAR TRAUMATISMS : A POSSIBLE SOURCE OF ERROR.

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(Preliminary Note.)

DURING the last two years a number of observers have estimated the blood pressure in cases of war traumatism and have published their results. Personal observations in the same line, chiefly made from observations on officers at the Swedish War Hospital in London, have convinced me that there is a possible source of error—namely, that in a certain proportion of unilateral traumatisms the pressures in the two arms may show wide differences. Not only is this so, but the readings on one day may be higher in one arm than in the other, but the reverse a day or two later. When differences occur they generally diminish as improvement proceeds and disappear some time before complete recovery.

In the cases mentioned below all the readings were taken with Riva-Rocci apparatus, and were measured alternately first from the one arm and then from the other on successive days. The interval between the two readings on the same day varied from five seconds (two apparatuses being employed) to ten minutes. Neither the length of this interval nor the arm in which the pressure was first estimated seemed to have any influence on the actual readings; this was shown by a number of controls taken from ten to thirty minutes later. These were obtained first from the arm which was dealt with last and with a different interval.

Thirty-six cases were examined in all; in twenty-six no difference, or only a slight difference (2 to 4 mm.), was found; such differences were considered negligible. In six cases differences of 6 to 8 mm. were found, which sank to about half this amount about three days later, and disappeared at the end of the week. The details of the other four cases are given below. Naturally a much larger number of observations will have to be made before definite conclusions can be drawn, but I think I should point out this possible source of error in order that those who are working on blood pressure in war traumatism may avoid it.

CASE I.

Lieut. —, suffering from a small septic shrapnel wound of the right shoulder inflicted on February 8th, 1918, with resultant muscular weakness of the whole right arm.

Date.	Right Arm (Injured Side).		Left Arm.		Difference.	
	Max.	Min.	Max.	Min.	Max.	Min.
February 28 ...	98	68	104	68	-6	+0
March 1 ...	108	68	104	66	+4	+2
" 5 ...	108	64	110	70	-2	-6
" 9 ...	112	71	110	72	+2	-2
" 20 ...	112	74	106	72	+6	+2
" 30 ...	108	72	108	78	+0	-6

The wound was practically healed on March 30th.

CASE II.

Lieut. —. The right leg was so badly injured on October 24th, 1917, that it had to be amputated through its middle on October 25th; reamputation in its upper third was performed on December 21st.

Date.	Right Arm (Injured Side).		Left Arm.		Difference.	
	Max.	Min.	Max.	Min.	Max.	Min.
February 21 ...	114	58	108	58	+6	+0
" 22 ...	122	68	126	62	-4	+6
" 23 ...	126	76	108	62	+14	+10
" 28 ...	114	52	104	60	+10	-8
March 9 ...	130	54	122	56	+8	-2
" 13 ...	106	48	124	60	-18	-12
" 18 ...	130	62	152	74	-22	-10

All the observations except the last, when he had been walking, were taken while the patient was in bed.

CASE III.

Capt. —. The right humerus badly splintered by a missile on September 20th, 1917. Bony union was quite good by January 8th, 1918, but he was left with almost complete paralysis of the musculo-spiral nerve. By the end of March, when he left the hospital, some amount of movement had returned in the extensors of the wrist.

Date.	Right Arm (Injured).		Left Arm.		Increase on the Uninjured Side.	
	Max.	Min.	Max.	Min.	Max.	Min.
February 23 ...	118	78	126	68	+8	-10
" 28 ...	120	68	132	72	+12	+4
March 5 ...	118	80	126	84	+8	+4
" 6 ...	92	74	114	76	+12	+2
" 12 ...	112	84	112	82	0	-2
" 18 ...	104	72	118	72	+14	0
" 22 ...	92	66	102	72	+10	+6

The pulse was much feebler and the auscultatory blood pressure sounds were less distinct in the right arm during the whole time that the patient was under observation.

CASE IV.

Lieut. —, on April 12th, 1918, was hit by a bullet which penetrated the right lung, leaving him with a good deal of consolidation in the right lower lobe, and diminished respiratory movements on that side.

Date.	Right Arm (Injured Side).		Left Side.		Increase on the Injured Side.	
	Max.	Min.	Max.	Min.	Max.	Min.
May 16 ...	128	72	110	78	+18	-6
" 17 ...	118	66	108	72	+10	-6
" 21 ...	128	80	112	72	+16	+8
" 23 ...	118	72	112	66	+6	+6
" 24 ...	118	72	114	70	+4	+2
" 28 ...	118	72	112	72	+6	0
" 30 ...	124	82	122	82	+2	0

The movements of the right lung were much improved on May 28th.

I am much indebted to the Medical Committee of the Swedish War Hospital for permission to publish the above results.