

by
L

The Medical Faculty

of

The Medical University of Nashville

by
Lumpie

of

the following Treatise upon
Gun Shot wounds and their
Treatment in certain cases

is

Most respectfully
Submitted
by the
Author

Gun shot wounds and their treatment
in certain cases.

There is probably no class of injuries that
the surgeon is called upon to treat which presents
so much variety as gun shot wounds; whether
we consider the extent of injury or the amount
of skill which may be required in their treatment

In the remarks which we submit for your
consideration upon the subject we do not expect
to retail gleanings from works on operative surgery;
what authors have said upon the subject is already
known to the reading physician. The object in view
not being for the purpose of gainsaying, nor of calling
in question the writings and opinions of others,
but for the purpose of giving a synopsis of our
own experience in the treatment of gun shot wounds.

We have been induced to select this subject more
particularly for the purpose of giving some
cases which came under our treatment, and
which we regard of great interest to the profession.

The importance which we attach to the cases
is founded on the character and extent of injury

in each case, and the successful treatment of each case without amputation, altho amputation was thought by our consulting physicians to be the only means of saving of the patients life. We entertained a different opinion. We shall now proceed to give the cases, and the treatment in detail.

Wyett a stout muscular negro man aged 25 years and the servant of Mr W. Vanlee; On the night of the 25th of June 1830 after having been chased by a pack of dogs a distance of three or four miles was overtaken by a Fox, Gorn (his pursuer), and shot the shot took effect through the muscular portion of the right ^{fore} arm just below the elbow, several ^{limb.} balls or slugs having passed through the ~~arm~~ ^{axilla}. The soft parts were torn away to the extent of three inches in length and in depth about two thirds of the arm; a small portion of common integument was left over the wound, and the radial artery, strange as it may appear, was left remaining entire and to all appearance uninjured; The radius was broken and about two and a half inches

carried away by the shot. The inferior third of the arm embracing of the ulna bone, artery, nerves, &c were uninjured. In addition to the wound of the ^{fore-}arm there was a slight flesh wound of the chest, but as this did not require treatment we shall not farther allude to it.

When we first saw the patient, some six hours after the occurrence of the accident, he was very much exhausted from loss of blood, tho' not bleeding at the time. Dr G.W. Cunningham, a very worthy gentleman, saw the patient some hours earlier and being unable to detect any pulse at the ^{wr.} wrist, together with the extent of injury, as above stated, was thereby induced to give it as his opinion that an amputation of the arm was essential ~~to the life~~ ~~of the patient~~, an opinion however afterwards relinquished. We may here state that we were induced to attempt the treatment of the case without amputation for the following reasons. To save the limb, or at least to make the effort, was our duty, if by so doing the patients life would not be endangered. We felt justifiable from the fact that the principal

arteries were undivided, and the patient was young and of vigorous constitution; finally, if we could not save the arm, the postponement of the operation (should it finally prove to be performed) till the line of demarcation would not be attended with any increase of danger to the patient; on the contrary, ~~the~~ he ~~patient~~ would be farther removed from risk from the fact, if from no other consideration, he would have recovered from the shock and exhaustion consequent upon the loss of blood which of itself would increase the risk of an immediate operation. An attempt to save the arm being determined upon, the practice which followed was exceedingly simple and unvaried.

The patient's clothing was changed; the ^{fore-}arm washed with cold water, after which the wound was filled with finely pulverised charcoal; a wet bandage was then applied to the ~~arm~~ ^{limb} beginning at the fingers and extending above the elbow. (No split-ⁿboard ^aused) Brandy and quinine were then given an ounce of the former and about 5 gr of the latter; the dose ~~is~~ repeated at intervals of an hour till reaction

Took place then discontinued. The ^{fore-}arm was carried
 across the chest and supported by a suspensory bandage
 as in cases of simple fracture of the ^{member} fore-arm.
 The patient was put upon a low diet, the bowels
 moved three or four times a day with small doses
 of Epsom salts; The ~~arm~~ ^{wound} was dressed twice a day
 by the removal of the bandage and thoroughly washing
 of the ~~wound~~ ^{wound} with warm water and castile-soap;
 after which the ~~wound~~ ^{it} was filled with charcoal
 and the wet bandage applied as before; The bandage
 was kept wet with cold water between the periods
 of dressing. On the fifth day the bandage was
 dispensed with on account of its ⁱⁿconvenience
 of application and a simple fold of linen used
 in its stead; this was kept wet as had been the
 bandage. Strong oak oze was occasionally
 used as a wash. The above treatment was
 continued without any alteration worthy
 of note till the 23th of July following at
 which time the patient had so far recovered
 as not to require any farther aid from us.

Remarks. The pulse never rose above eighty,

The wound never suppurated but very little
; pain at no time severe enough to require an opiate
; appetite for food remained good through out
; No bond of union ever took place between
the fragments of the radius; as the wound
cicatrized the hand was drawn upon the
wrist towards the wound, but as this was unavoidable
no attempt to prevent it was made. By the
time the cicatrization was complete the hand ^{had}
become considerably drawn upon the wrist, and
notwithstanding the deficiency of bone and
the deformity of hand which followed the
healing of the wound; Wyett could use the arrov
and hand with astonishing dexterity; being
a fiddler, ^{he} could use the fiddle and the bow
as in former days. To complete Wyett's history,
He was lodged in jail for the crime for which
he had been shot, was twice sentenced to be
hung and was finally acquitted, having proved
himself too much for the power of powder and
ball, the science of physic and the learning of
the law, clearly establishing the truth of the adage
that it is better to be poor & lucky than poor & rich.

7

We shall now present the second case for your consideration.

Mr Hunter & Vanleeuw aged 22 years of slender form and delicate constitution, a native of Pennsylvania, having only been in the State of Tennessee a few months.

On the afternoon of the 6th of April 1833, Mr Vanleeuw in company with a friend was amusing himself in a squirrel hunt; he was carrying ~~his~~ his gun cocked so as to be ready at any moment should game present itself; seeing a squirrel he fired one barrel ^{with} ~~success~~ ~~and~~ he then walked up to where the squirrel was lying, placed the breach of the gun on the ground with his left arm resting on the muzzle (the gun still being cocked) and in this awkward ^{manner} stooped down to pick up the squirrel. While in the act of stooping, the gun ^{went off} ~~exploded~~ the entire contents of the barrel popping through the ^{fore} arm mangling it in a shocking ^{manner} ~~manner~~, breaking ~~of~~ both bones, and carrying away both bone and muscle for a space of more than two inches. The only

parts escaping injury at this portion of the arm were the ulnar artery, nerve and two small portions of common integument; the radial artery and nerve were divided. The shot in passing through the ^{fore-}arm were divided a part being reflected towards the chest, and but for the fortunate circumstance of Mr Vanless having his watch in his vest pocket at the time he must have been killed on the spot; the number of shot which struck the watch must have been considerable and they must have struck the watch with great force as it was marked flat and the side of the chest was severely bruised by the watch, Fortunately no shot entered the body. The remainder of the shot together with paper wadding and particles of the patients clothing were driven into the humerus a little below the insertion of the tendon of the deltoid muscle popping upward, and backward and becoming lodged under the posterior border of that muscle; the bone was evidently injured as well as the soft parts but to what extent we were never able to ascertain Mr Vanless loped a great deal

of blood and certainly must have bled
 to death but for the assistance of his smiting
 companion Mr G Dixon who was at hand
 and had the presence of mind and good sense
 to bind a handkerchief tightly around
 the arm above the elbow and over the second
 wound. In this condition Mr Wambler was
 placed upon a gentle horse and taken home or
 rather to the farm house a distance of at least
 one mile. Some four hours after the accident
 we saw the patient, he was very much
 exhausted, and in great agony of pain; we give
 him some stimulents and about 25 drops
 of Laudinum; in thirty minutes we
 repeated the dose, The patient becoming
 a little revived we proceeded to undress him
 and to wash and dress the wounds, which
 we were a good while in doing, having
 to repeat the stimulents and opiates and
 await their effects, a slight exudation
 of blood from the wounds followed
 the dressing which was all the

hemorrhage with which we had to contend
 Treatment for the night consisted
 in placing the patient in the recumbent
 posture upon a suitable bed with
 the arm resting upon a pillow
 against the patients side with a wet
 napkin over the wounds. The patient was
 then covered with blankets. Stimulants
 and opiates were given through the night
 at intervals of from one to two hours
 ; The patient slept but very little
 April 5th 10 o'clock A.M. Pulse 120 and full
 ; considerable thirst with a disposition
 to vomit, Cold water and a little wine
 were given the thirst subsided to some
 extent, and the stomach become composed
 some chicken water was then given and retained
 The bowels moved by an enema of oil and gruel
 Cold wet clothes to the arm, and opiates
 wine, and chicken water were continued
 through the day and night following
 April 6th Patient rested better and slept
 better than on the previous night

On the morning of the 6th Dr. Lot
 H. M. Porter M.D. Professor of Anatomy,
 in the Medical University of Nashville
 met us in consultation. Dr. Porter was
 of opinion that an immediate amputation
 was the only means of saving the life
 of the patient. On the contrary we were
 of opinion that to amputate was to
 sever the only thread upon which life
 was then suspended.

Dr. Porter insisted that it was impossible
 for the first injury (that of the fore arm)
 to heal, the idea that a bond of union could
 take place under the circumstances, with
 the principal artery and nerve divided, the
 entire muscular substance as well as bone
 torn away to the extent of some inches
 was preposterous and to attempt the treatment
 without amputation was to say the best
 he could for it empirical. Seeing ~~that~~
 that the Professor had taken his position
 from which he would not be moved we asked

him the time to operate His answer
was immediately. We then asked him
at what point he would amputate. His
answer to this question was that he would
amputate at the inferior point of the
upper third of the humerus. To all of
which we objected. We stated to the Professor
that we regarded the case as an anomaly in
surgery and that no rule hitherto layed
down by surgical authors could be adopted
in the management of the case under
consideration. If we amputated at
the point he suggested we could only remove
one wound, leaving two to treat, one
of the arm, and ^{one} of the chest, not only so
but we thought that he would be as hard
pressed for authority justifying of him
in amputating as we in treating of it
without an operation; especially so
important an operation as the amputation
of an arm using as he would here to do
the mangled and burnt flesh of a gun
shot wound as a flap to cover the stump.

were he to performe the operation at the point suggested (a description of this point has already been given); again if you change the point of operation to the shoulder joint there would be nothing gained for there the same difficulty as regards the flap exists in addition to this the patients system must suffer a greater shock from a high operation than from a point farther removed from the body, and in our patient we had to contend with an extensive injury of the chest corresponding to the injured arm farther than this in view of the amount of blood already loosed we did not believe the patient could survive an operation even if it were desirable.

Finally we told the Professor that if there was empiricism at all it consisted in the idea of an amputation and that we were positively opposed to amputation in view of all the circumstances.

Dr Porter persisted in his views notwithstanding
our opinions to the contrary. The good
sense of the Dr's opinions, we did
not see at the time and frankly confess
that we have not been able till the present
altho nearly four years have since elapsed
to tell the Dr that if the patient and
friends desired him to operate he could
do so, but ^{with} full due respect to him and his
opinions we declined our assistance in
the operation or of having anything
further to do with the case provided
such a course was adopted. While we
were willing to grant to him the right
of opinion we claimed the same right
for ourself and under the circumstances
he could not reasonably expect of us co-operation
and assistance. It was then determined to
state to the patient and friends our respective
opinions. The choice fell to our lot
and we took full charge of the patient
to treat the case as best we could without
amputation; we felt the task to be truly

a forlorn hope. We will now state as briefly as convenient the treatment which followed &c &c

Two things were desirable, first to place the patient and limb in as comfortable a condition as possible second to have the arm so arranged as to enable us to apply the necessary dressings with as little disturbance to the limb and patient as was possible also to protect the bedding from becoming soiled through the continued application of water to the arm

The patient already occupied a suitable bed the deficiency consisted in a suitable apparatus for the arm. We had recourse to our own ingenuity and were so fortunate as to be able to construct one which answered the purpose admirably well and it performed so important a part in the after treatment it is necessary that we should give a description of it, tho' this will be imperfect without a drawing

A broad solid block of wood some four feet in length furnished at one end and against the side with two standards reaching as high as the edge of the bed and perforated with an equal number of holes through which a movable bolt was passed, to the other end of the block was fastened an upright slot extending some two feet higher than the bed, the slot was furnished with a hook one foot from its upper extremity.

The apparatus for the arm was a right angled box the length of the patients arm; the shoulder extremity was furnished with two broad strips of linen three feet in length, the digital extremity was furnished with one long strip of linen; the bottom of the box at its angle was perforated, the edges of the ^{box} from one end to the other were furnished with a border of cloth made fast with tacks, next were cross strips of linen which were fastened to the bordering and permitted in cropping over the box to nearly touch the

The bottom of the box, these strips were about two inches in width and ⁱⁿ cropping the box their edges were overlapped one third.

The apparatus being now constructed, the first piece was placed along by the side of the bed so as that the near standard and the slot were touching the bed-rail; the box was then placed with the shoulder extremity at a right angle with, and resting on the bed. The angle of the box resting on the bolt in the standards; the radial extremity of the box being horizontal to the bed, and its digital extremity suspended by means of the strip of tape carried over the upright slot and fastened to the hook prepared for the purpose.

Having arranged the apparatus the patient was then placed near the edge of the bed the arm was carried into the box; soft morass pads were placed by the side of the arm and folds of linen on it and cross strips retained the arm in its place.

The shoulder stripes were carried around the shoulders of the patient in the form of the figure of 8. The advantage of these shoulder strips, was to keep the patient from pulling on the arm, in the Drop strips we had both support and protection, when it was desirable to elevate or depress the elbow, this was readily done by moving the bolt in the standards placing of it higher or lower as was desired and if we wished to elevate or lower the hand, this was done by taking up or letting out the rope as was desirable, the hook holding of it at whatever elevation was desired; the holes in the bottom of the box permitted the escape of all the water used in bathing and washing of the arm, thus equipped we could apply any quantity of water and to any portion of the arm without soiling of the bed or in the least wise discomforting of the patient.

The patient was kept upon a low diet the nervous system kept quiet by an occasional

powder of morphia, a pill of opium or a few drops of Laudanum, the bowels were kept open by Epsom salts, or Siddy-powders, and occasionally an enema of oil and gruel so as to ensure one to two motions in twenty four hours, cold water was used freely for the first eight or ten days; supuration had by this time set in pretty freely the cold water was discontinued; warm water and castile soap were used for cleansing of the wounds after each washing. The wounds were filled with finely pulverised char-coal, and folds of old linen wet in a muzzlage of the male fern and applied to the entire arm. About the fifteenth day the shoulder and upper wound and the side of the chest assumed an erysipelatous inflammation which was soon checked by the internal use of salts and the solution of sugar of lead externally. The wound in the fore arm was not implicated.

Remarks, The pulse rose during the erysipelatae inflammation to 140- The average pulse was 90 during treatment.

The wound in the fore arm healed more rapidly than the other, the supuration was also less copious, we presume from the fact the wound was open rendering the process of cleansing and the removal of foreign bodies easy while that of the humerus had but one opening and that small at the same time the wound contained for some length of time, shot, bits of paper, and clothing, which on account of the whims of the patient were permitted to remain longer than they should have done,

The shot were readily felt under the skin behind the shoulder and permitted to remain till an abscess formed in the axilla when we no longer hesitated, a lance was put into the abscess, and a history in the shoulder over the shot, a portion were removed and first and lost some forty, - still lieing some behind, the bits of

clothing, paper wadding &c. were removed during the progress of suppuration.

All the time of treatment the temperature of the room was kept regular. All company, except the nurses and occasionally a friend, were excluded. Our labors were incessant day and night, aided by a servant and two very efficient nurses Messrs Hugh Kirkman and G. G. Dixon.

Finally on the 1st day of July following, a little less than three months from the receipt of the accident we discharged our patient so far convalescent as not to require our farther aid. Jan 1st 1834

Patient well the arm two inches shorter than its fellow

Mr Canby has at this time the use of all his joints even the fingers, hand, wrist elbow and shoulder the arm is not as strong as before the injury, but sufficient^{ly} so for all practical purposes Jan 1834

We had intendid in the commencement
of this treatise to have given one or two
more cases but having aludy transcend-
ed our limits are constrained to desist

In conclusion we subscribe our self

Yours most respectfully

J. M. Larkin