



Centenary of the first public
operation under an anæsthetic
in Europe . carried out at

UNIVERSITY
COLLEGE
HOSPITAL

by

ROBERT LISTON

on 21st December, 1846

31173
H. 222

30/

CASE NOTES

on Frederick " ," whose
leg was amputated successfully
21st December, 1846

U.C.H. MEDICAL SCHOOL

21st DECEMBER, 1946

FREDERICK "——," aet 36. Admitted Monday, November 23rd, 1846. Occupation—Butler, the last 16 years prior to that a footman. Unmarried. Habits regular, but sometimes obliged to be up late, this has especially been the case of late, say for 2½ years past. Food of good quality, and has had a strong appetite, especially for breakfast. Place of abode, 37 Upper Harley Street. Slept in a rather confined room for 15 years. Resided in London for 25 years, but during that time may have been absent, in months some 5–6 years. Stature, 5ft. 8in., complexion fair. State of mind, cheerful. Sleep is generally sound. Father died 10 years ago with diseased abdominal viscera, had also asthma. Mother still living, aged 68. Brothers and sisters healthy, none died after infancy. All are occasionally subject to a dull pain in the interscapular region, most on the left side. Habitual state of health good, although not so strong now as 8 or 9 years ago—rather thin. Had an attack of gonorrhoea 18 years ago, and again about 10 years since had another attack which was treated by Dr. Mayo and accompanied by a skin disease on the upper extremities which lasted about 5 months. Urine passed in a thin stream.

Present attack. When about 5 years old had a gnawing pain in the right hip which however left without treatment, when about 15 a hackney coach went over the right leg a little above the ankle. The right knee 6 years since began to swell and became very painful, for 2 years it remained stationary, then a partial fall during which the knee was violently bent gave severe pain, this subsided and 2 years after, which is 2 years since, he again had a fall on a pavement and struck the external part of the head of the tibia (most probably not the head of the fibula). This produced considerably more swelling which did exist somewhat before, and probably extravasation of blood, for discoloration of the leg ensued. Came then (1844) as an out-patient under T. Morton, and was ordered a lotion and aperient medicines. Soon discontinued this and treatment was suspended until 5 months since when a solution of iodine was ordered by a medical man as a topical application. The swelling which existed over the right tibio-peroneal articulation was opened 3 weeks since and a number of irregularly shaped bodies were pressed out. These were preserved in dilute alcohol and at the present time present the following appearance. Size from that of a small pea to that of a horse bean, quantity sufficient to fill a 2-ounce bottle. The structure presented to the unaided eye is that of finely laminated bodies, the laminæ being vertical to the surface and at their free border quite translucent. Examined with the microscope, magnified about 400 diametres, the base of the bodies appears to be a finely fibrous texture, and this containing cells

varying from the $1/3500$ to the $1/2500$ of an inch. The cells are filled with granular matter, and have not a distinct nucleus, are globular in form and appear to have a distinct envelope. It is Professor Liston's opinion that these bodies are the remains of extravasated blood. Some discharge took place from the cavity left, but this nearly healed up prior to his admission to the hospital.

Present state. Health good, cheerful, appearance that of a person in good but not robust health. Right knee much swollen, 2 apertures the size of a small pea about an inch apart and over the tibio-peroneal articulation which is thought to be affected, a probe passes superficially beneath the integument 3 or 4 inches both inwards and upwards. A thin serous discharge is given out. Pulse 80. Ordered to have full diet and milk 1 pint.

Nov. 24. Ordered to remain in bed. Syr Ferri Iodidi 1 drachm ter die.

Nov. 25. Today Professor Liston examined the sinus with a probe, which passed freely up from the aperture to opposite the head of the tibia, an incision was made opposite the tibio-peroneal articulation and the finger passed down, bare bone was distinctly felt, the outer head of the tibia. The wound was plugged but prior there was an attempt made to ascertain whether the diseased portion of bone were loose, this was found not to be the case. Water dressings ordered and complete rest.

Nov. 26. Sleep much disturbed this last night in consequence of an unruly patient in the private ward above. Yesterday was much purged with Pil. Aloes cum Hydrargyro gr. x. Complains of want of appetite. Pulse 70. Tongue furred. Ordered a chop daily, also beef tea 1 pint, and porter 1 pint.

Nov. 27. At the usual time of visit appeared much the same, 10 $\frac{1}{2}$ a.m. a violent attack of pain in the whole affected limb came on and this was accompanied by rigors. The double inclined plane and hot fomentations were ordered at noon. 1 p.m. The pain extends from the hip to the toes and increases in severity. Hirudines xii to the kneejoint which has increased in size and is puffy. R/ Pulvis Ipecacuanhæ comp. gr. x statim.

5 p.m. Sickness, one or two tablespoonfuls of dark matter ejected. Complains of headache. Pulse 100. Dosed towards night, but slept little during it and not able to occupy the recumbent position owing to the pain.

Nov. 28. At 6 a.m. suffered much from the pain in the joint which was somewhat relieved by fomentations. The joint is now

much swollen evidently from collection of matter. Throbbing in the night was painful. The patient is very dejected and has been so from the commencement.

R/ Hydrargyri Chloridi gr. v

Opii gr. $\frac{1}{2}$

Fit pilula statim.

Haustus sennae meridie

1 p.m. Has been sick and ejected the above or part of it. Headache present, pulse 120, skin moist, anxious expression of countenance. 5 p.m., pain much abated.

Nov. 29. Better this morning, no appetite, much less pain in the knee. Afternoon—sick, brought up half a pint of bilious matter, is feverish, pulse 120. Thirst great. Tongue furred, R/ Misturæ Salinæ, 1 ounce

Acidi Hydrocyanici Dil. m. v ter die

Nov. 30. Has slept during the last night. Bowels not open for 40 hours.

R/ Injectio Terebinthinæ statim

R/ Hydrargyri Chloridi gr. V

Creosoti m. i statim

Urine has a strongly acid reaction, is of S.G. 1028 and contains no albumen.

Dec. 1. Was sleepless last night—omit the Mist. Salinæ. Towards noon the pain in the knee was very violent and a poultice was applied.

R/ Hora somni habeat Morph. Hydrochl. gr. $\frac{1}{2}$

Dec. 2. Slept well. Is feverish and anxious.

R/ Sodæ sesquicarbonatis gr. x

Dec. Cinchonæ $1\frac{1}{2}$ ounces ter die

Has been informed of the probability of the limb being lost.

Dec. 3. Feels sick—less pain in the knee. Fomentations are being applied constantly. Still feverish, did not sleep last night with the morphia.

R/ Sodæ sesquicarb. gr. xx

Acidi Citrici gr. xv ter die

R/ Pulv. Opii gr. i

Creosoti m. i. Fit pil. h.s.s.

Dec. 4. Slept hardly at all last night although the pill containing 1 grain of opium was taken. Pulse 80. Discharge of pus considerable this last night. When the joint is pressed gently but continuously there is pus poured out of the aperture on the right side of the knee, this is the case if the pressure is applied either above the patella or on the inner side.

2 p.m. Professor Liston opened the joint by an incision through the fibres of the Vastus Externus and opposite the outer condyle of the femur, after having passed a trocar down to ascertain the presence of pus. 8 to 10 oz. of pus mixed with blood escaped. 5 p.m. Pulse 100. Tongue moist, less furred, complains of pain in the joint and over the patella.

Dec. 5. The patient slept 6 or 7 hours last night, feels better. To continue the saline. Dined today on fish, appetite improved—indeed there has been great relief from the evacuation of the matter yesterday. Limb on the double inclined plane.

Dec. 6. Discharge continues considerable—suffers less pain.

Dec. 7. Appetite improves, took part of a mutton chop today at dinner. Pulse 100.

Dec. 8. This morning on raising the leg, grating in the knee joint could be perceived, great pain is complained of on the least motion. The bowels are relaxed, omit the saline.

R/ Sodæ sesquicarb. gr. x

Dec. Cinchonæ $1\frac{1}{2}$ ounces. Bis die

Dec. 9. Professor Liston examined the joint today and decides on its coming off. The constitutional disturbance has ceased and the health is tolerable, decidedly improved.

Dec. 10. The limb was today put up on the improved frame and a bandage applied above and also below the knee. The patient complains of his cough being troublesome.

R/ Syrupi Scillæ $\frac{1}{2}$ drachm

Tinct. Opii $\frac{1}{2}$ drachm

Vin. Ipecac. 2 drachms

Mucilag. 2 ounces

Aquæ 3 ounces

$\frac{1}{2}$ ounce subinde urgente tussi

Dec. 11. Pulse 90. Today at 11 coughed up sputa tinged and streaked with blood. The amputation is decided on as soon as the state of health of the patient justifies it. On examining the chest there appears some dulness under the left clavicle. The respiratory sounds as usual.

Dec. 12. Did not sleep well last night owing to the nurse having given him too small a dose of the anodyne. Cough still troublesome, general appearance improved.

Dec. 14. Is feverish and restless today.

Dec. 15. Has again brought up a little blood or rather sputa streaked with blood. Urine loaded with lithates. Pulse 120. Tongue dry, appearance pallid, appetite very slight.

- Dec. 16. Cough still troublesome, tongue furred, pulse 100. Slept tolerably last night. Emaciation has been considerable. Evening—there is more pain in knee.
- Dec. 17. Slept well, but last night prior to taking 1 gr. of hydrochlor. morph. had a kind of hysterical attack and was much excited. Is quiet again this morning.
- Dec. 18. Pulse 100. Feels better, slept well last evening. Tongue not so furred. Appetite improved—general appearance better. Urine high coloured.
- Dec. 19. Evening pulse 80. Cough not so troublesome. Slept last night without morphia.
- Dec. 20. Slept again last night without the anodyne. General appearance has decidedly improved the last 2 or 3 days.
- Dec. 21. It having been decided to remove the limb to-day at 25 minutes past 2 p.m., the patient was taken into the operating theatre. Prior to the operation ether vapour was given to breathe for between 2 and 3 minutes, the effect of this was so far to stupefy as to cause complete insensibility to pain although consciousness was retained and questions were answered. Professor Liston finished the complete removal of the limb in 25 seconds—not the slightest groan was heard from the patient nor was the countenance at all expressive of pain. This is the first capital operation which has been performed in this country under the narcotising influence of ether vapour, and it was perfectly successful. The patient did not know that the limb was removed and declares distinctly that he has no remembrance of having suffered any pain either in the theatre or in coming away. There was a great sensation of cold and a desire to be covered up expressed as he was being removed back and this is remembered now, one hour after the operation. It was some minutes after being laid in bed before any pain was felt. There is the remembrance of “something like a wheel going round his leg.
- 3½ p.m. Much pain is now felt in the stump. Pulse 90.
7 p.m. The flaps were now brought together and two more arteries secured, one of which was the small artery running in the centre of the great sciatic nerve, making 10 ligatures including the double one placed on the Femoral artery. Strips of isinglass plaster were then put on and a very neat stump made. Great pain was complained of during this proceeding. Pulse 90 and expression of countenance cheerful—the pain ceased almost

immediately on the flaps being brought together and secured. A brother is going to pass the night with him. Examination of the joint. The two original openings on the outer side of the head of the Tibia communicate with the head of that bone, not with the tibio-peroneal articulation which appears perfectly sound. The outer head of the Tibia is diseased, denuded of periosteum for the space of an inch and a half in extent and appears to have suffered a commencement of process of absorption, the articulating surface of the Tibia is quite devoid of cartilage as are also almost completely the condyles of the Femur. The semilunar cartilages are implicated, denuded of synovial membrane, and in parts softened. The denuded portion of the Tibia is quite vascular. The Patella is also almost bare of cartilage, as is the opposing articular surface of the Femur. No pus was present in this part of the cavity, but some dark blood. This communicates with the opening made in the External Vastus. On the posterior surface of the Tibia, implicating and decidedly encroaching on the Gastrocnemius is a circumscribed cavity having sinuses burrowing off in several directions and filled with fetid purulent matter. A similar condition obtains on the posterior surface of the Femur for 3 inches above the condyles. The muscles, Semimembranous, Biceps and the Gastrocnemius are streaked with adipose tissue and a layer of the same nearly half an inch thick except in front, extends subcutaneously round the joint. The parts are very vascular. The original cavity from which the foreign bodies were extracted presents a few remaining—this cavity is not now above 2 inches by $1\frac{1}{2}$ from above downwards and has for its base the external lateral ligament.

- Dec. 22. Slept well last night. The severe pain which ceased almost immediately on the 3 sutures being put in last evening has not returned, the little pain left is referred to the sole of the foot. The stump was left uncovered all night. Pulse 100.
- Dec. 23. Slept well again last night, complains of some sore throat.
- Dec. 24. Going on favourably, he has engaged a night nurse to sit up with him.
- Dec. 25. Pulse 90, countenance cheerful, he is not so fidgety, the stump gives no appearance of inflammatory reaction at the union of the two flaps—a little discharge has commenced.

- Dec. 26. Going on well. Pulse 92. Tongue clean. Bowels constipated. Ordered Haust. Domest. Complains of some slight pain in the right groin.
- Dec. 27. No report today.
- Dec. 28. Slept but indifferently last night, complains of his cough being more troublesome. Pulse 96. Tongue clean. Stump healthy.
- Dec. 29. Going on favourably. Pulse 94. Tongue clean, one or two ligatures came away this morning.
- Dec. 31. Improving daily, stump healthy and discharging a small quantity of good pus. Two more ligatures came away. A bandage was first applied today. Pulse 96. Tongue clean. Bowels constipated.
- R/ Ol. Ricini $\frac{1}{2}$ ounce quam-punum
R/ Dec. Cinchonæ $1\frac{1}{2}$ ounces
Sodæ sesquicarb. gr. x ter die
- Jan. 1. 1847 On renewing the bandage and dressing much pus was discharged. Wound looks healthy. In other respects the same.
- Jan. 2. Cough quite gone, the case is proceeding very favourably.
- Jan. 4. Countenance much improved and really cheerful. Another ligature came away so that there are 5 left. The Dec. Cinchonæ is reduced to 3 times a day, there is considerable discharge yet, appearance that of a phthisical patient.
- Jan. 5. Going on well, spirits very good. Yet he has had more pain in the stump the last 24 hours than at any time since its removal.
- Jan. 6. Another ligature came away. The discharge of fetid pus is considerable.
- Jan. 7. Health good—the plaster round the stump has today been somewhat cut off as it afforded a resting place for the discharge which has begun to irritate the skin. There is a very passive condition of the stump. The bark is continued.
- Jan. 9. Health and appearance good, discharge not copious nor so fetid. Ordered Porter $\frac{1}{2}$ pint daily.
- Jan. 10. The ligature on the femoral stump came away today, the 20th since the operation.
- Jan. 11. Very cheerful today. After dinner pulse 120, tongue clean. There is a dull pain in the stump constantly and at times pains felt as in the heels and toes. Appetite improved.
- Jan. 12. Much the same, he is very thin and rather anxious.

- Jan. 13. Cheerful today, sat up for the first time, feels low and perspires at night.
- Jan. 14. Pulse 120 at 10 a.m. Is thirsty this morning. The matter from the stump is very fetid. Took Inf. Sennæ 1 ounce. Chest sounds healthy, the dullness under the left clavicle is quite gone. Urine deep colour but without sediment.
- Jan. 15. Is not so well today, has a grumbling pain in the bone, looks delicately fair.
- Jan. 16. Pulse 120. Slept poorly last night. Perspires much at night. This morning at 8 a.m. felt acute pain for a short time over the end of the Femur. Discharge very fetid.
- Jan. 17. The isinglass plasters were taken off today, no return of the pain.
- Jan. 18. Pulse 125 this evening. He is impatient to get out of bed. The stump is one half healed together. The patient has had wine (smuggled into the hospital) for 10 days back. He is depressed.
- Jan. 19. Is in better spirits today.
- Jan. 20. Is allowed to rise today, sat up for 2 hours.
- Jan. 21. Urine high coloured. He is in much better spirits, sat up today again.
The discharge of pus is less, but not of such good quality, heavily fetid.
- Jan. 23. Discharge much less—healing proceeding rapidly.
- Jan. 25. Still complains of pain—some free exuberant granulations have been touched with sulphate of copper.
- Jan. 27. With the exception of one or two places the stump is healed over. There appear to be two sinuses connected with the bone.
- Jan. 28. But little discharge and that not fetid. It is intended that he shall leave the hospital soon.
- Jan. 29. The bone can be felt with a probe for a small distance and there is a free sinus leading to it.
- Jan. 30. Still some pain in the stump but the appetite is good.
- Jan. 31. Is very cheerful, walked yesterday on his crutches with some aid. No dullness of chest. Is to leave the hospital this week.

(signed) Edward Palmer, Dresser.

- Feb. 1. Is gaining strength, and walks about on his crutches. Gradually gained strength and was discharged, cured, February 11th.

(signed) Edward J. Franklyn, Dresser.

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