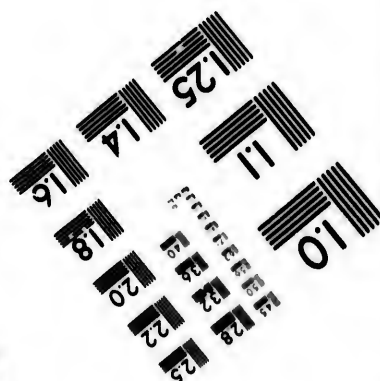
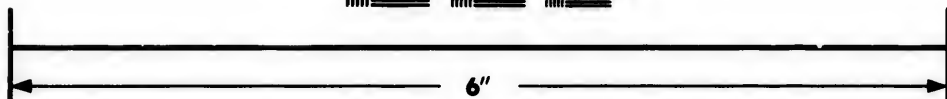
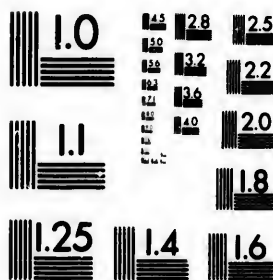


**IMAGE EVALUATION
TEST TARGET (MT-3)**



**Photographic
Sciences
Corporation**

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503



Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- | | |
|---|---|
| <input type="checkbox"/> Coloured covers/
Couverture de couleur | <input type="checkbox"/> Coloured pages/
Pages de couleur |
| <input type="checkbox"/> Covers damaged/
Couverture endommagée | <input type="checkbox"/> Pages damaged/
Pages endommagées |
| <input type="checkbox"/> Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée | <input type="checkbox"/> Pages restored and/or laminated/
Pages restaurées et/ou pelliculées |
| <input type="checkbox"/> Cover title missing/
Le titre de couverture manque | <input checked="" type="checkbox"/> Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées |
| <input type="checkbox"/> Coloured maps/
Cartes géographiques en couleur | <input type="checkbox"/> Pages detached/
Pages détachées |
| <input type="checkbox"/> Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire) | <input checked="" type="checkbox"/> Showthrough/
Transparence |
| <input type="checkbox"/> Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur | <input type="checkbox"/> Quality of print varies/
Qualité inégale de l'impression |
| <input checked="" type="checkbox"/> Bound with other material/
Relié avec d'autres documents | <input type="checkbox"/> Includes supplementary material/
Comprend du matériel supplémentaire |
| <input type="checkbox"/> Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure | <input type="checkbox"/> Only edition available/
Seule édition disponible |
| <input type="checkbox"/> Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées. | <input type="checkbox"/> Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/
Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible. |
| <input type="checkbox"/> Additional comments:
Commentaires supplémentaires: | |

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
					✓						

The copy filmed here has been reproduced thanks to the generosity of:

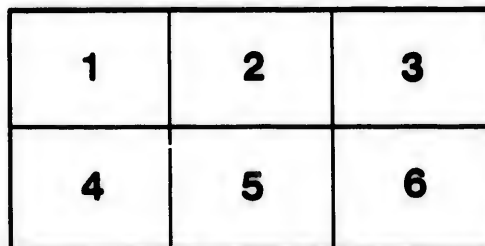
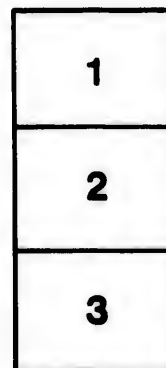
Medical Library
McGill University
Montreal

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Medical Library
McGill University
Montreal

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

ails
du
odifier
une
nage

rrata
o

elure,
n à

32X







AN OBSCURE CASE OF POPLITEAL ANEURISM WHICH SIMULATED SARCOMA.

BY FRANCIS J. SHEPHERD, M.D., C.M.,
Professor of Anatomy McGill University ; Surgeon to the Montreal General Hospital.¹

W. H., aged 46, carpenter, entered the Montreal General Hospital Dec. 31, 1883, suffering from a large ulcer of the right leg, and a tumor of the lower and back part of the right thigh. Previous to 1875, his health had been always good, no history of syphilis or rheumatism, but has had frequent attacks of gonorrhoea. Has been intemperate since boyhood. For three years was a soldier in the British army. In the autumn of 1875, was treated in the Montreal General Hospital for double popliteal aneurism.² The aneurism of the left popliteal was treated by digital compression, and that of the right by Carte's compressors. After remaining in hospital two months, he was discharged cured. He says that he kept well for two years, then the small hard lump which had remained in his right popliteal space began to enlarge and pulsate, and was again cured by compression. For the next four or five years he was not troubled with his aneurisms, but about a year and a half ago noticed a small tumor in the right popliteal space; this tumor was hard, firm, and did not pulsate; it gradually increased in size, and when he was in hospital a year ago for treatment of the ulcer on his right leg it was noted as being about the size of a man's fist, fixed, hard, and without pulsation. From this time the tumor increased more rapidly.

The following is the surgical reporter's account of his condition on entrance: "On examining the affected leg a huge indolent ulcer is seen on the lower and outer side; there is also a large tumor, nearly the size of a man's head, on the back of the thigh; it extends from the popliteal space to the middle of the ham, and is somewhat egg-shaped. The measurement of the thigh a little above the knee, the point where the

¹ Read before the Canada Medical Association, Aug. 1884.

² An account of his case is published in the Canada Med. and Surg. Journ., vol. 1. p. 298.

circumference is greatest, is twenty-three and a half inches. The left limb at the same point measures twelve and a half inches. The tumor is immovable, smooth, and inelastic; it gives on palpation no sense of fluctuation, neither is there any pulsation in it, nor is any thrill felt or bruit heard. Pressure on the artery above does not influence the tumor. It is not tender, and there has never been any pain, either in the leg or the tumor, except after long standing; in fact, the patient thinks very little about the tumor, and comes into hospital for the purpose of having the ulcer in his leg treated. The leg, owing to the size of the tumor and the stretching of the tissues over it, cannot be straightened perfectly or flexed completely; he lies with it in a semi-flexed position. Coursing over the tumor are numbers of enlarged veins. The leg is not swollen or œdematous. The glands in the groin are enlarged, and can be felt extending under Poupart's ligament into the abdomen."

Not feeling sure as to the diagnosis, and hesitating from the history to pronounce it a sarcoma, I decided to watch the case for some time before undertaking operative procedures.

After the patient had been under observation some three weeks, he complained of severe pain in the tumor and down the back of the leg, and it was found that the measurement at the point of greatest circumference had reached twenty-four and a half inches. He now began to develop febrile symptoms, and for several weeks his temperature was a couple of degrees above normal, his tongue was coated with a white fur, and there was some tenderness on the right iliac fossa. When he recovered from this slight fever, which lasted about three weeks, and which I in no way connected with the tumor of the leg, a consultation of my colleagues was called. The tumor had all this time been slowly increasing in size, the man could now only very slightly either flex or extend his leg, and he suffered severely from pain.

Although fully alive to the possibility of the case being one of aneurism, still, from the total absence of aneurismal symptoms, and after repeated and careful stethoscopic and manual examinations, I was becoming, from week to week, more convinced that the evidence pointed to sarcoma, either of the periosteum or the parts about the old aneurism. My colleagues agreed with me in this conviction, and amputation was decided on.

The man having readily consented, amputation was performed on February 24, 1884, at the junction of the upper with the middle third of the thigh and well above the tumor. The circular method was employed, and the stump was dressed with iodoform, gauze, and borated cotton. The wound healed rapidly, and at the end of two weeks, with two dressings, was all united by first intention, except where the drainage tubes had been.

Examination of the Tumor.—On cutting into the tumor it had to the naked eye all the appearances of a neoplasm, but on examining it microscopically it turned out to be composed simply of fibrin. The fibrin was not deposited in layers as is commonly the case, but solidified "en masse," so to speak. There was no cavity in the tumor, but it was solid throughout. The femoral artery ended above the tumor in a blind sac (see A in accompanying Fig.). Upon slitting up the popliteal artery, at the lower end of the tumor, the external coat of this vessel was found con-

tinuous with the capsule of the tumor, and here no doubt was the orifice of the aneurism; about this point the clot was in a softer condition than in other parts of the mass. The sciatic nerve was tightly stretched over the tumor and considerably flattened. Large collateral branches joined the popliteal artery near where it was connected with the tumor (see accompanying Fig.).

The diagnosis of popliteal aneurism is not generally a matter of great difficulty, still some of the cases of aneurism simulate other diseases so closely that mistakes are occasionally made. Many able surgeons have opened aneurisms supposing them to be abscesses,¹ and others again have tied the femoral artery for malignant growths, mistaking them for aneurisms. There are not a few cases recorded where an old consolidated aneurism has been mistaken for a sarcomatous tumor. Dr. Henry B. Sands reported such a case to the New York Pathological Society (*Medical Record*, vol. xxv., 1877, p. 188), where amputation was performed for supposed sarcoma of the ham, and which turned out to be a consolidated aneurism. The case is as follows:—

"A man aged 46 entered the Roosevelt Hospital, suffering from a tumor of the right leg. He had been the round of other hospitals, and the opinion arrived at was that the patient suffered from a sarcomatous tumor. Treatment by compression had been practised fourteen years previously, for supposed popliteal aneurism. This was continued for nine weeks, and subsequently another tumor developed below the site of the original one. This increased from year to year, by an annual increment of an inch and a half in the circumference of the limb. Ten days before admission to the Roosevelt Hospital he was seized with a rigor, and, on entering, a painful tumor on the leg was noticed, which extended down from the popliteal region. A careful examination was deferred for four days, on account of the depressed state of the patient. It was then found that the tumor was situated on the posterior and upper two-thirds of the leg. The measurements were as follows: Five inches above the ankle the circumference was five inches, six and a half inches above the ankle, the girth was nineteen inches; at



A. Femoral artery ending above the tumor.
P. Popliteal artery continuous with the sac of the tumor. C. Large collateral branch. N. Sciatic nerve.

¹ See Dr. S. Smith's "Diagnosis of Abscess from Aneurism," *AMER. JOURN. MED. SCI.*, April, 1873.

the upper third of the leg the measurement was twenty-three and a half inches. The size diminished gradually in the upward direction. The tumor was firm, smooth, and nodulated. That portion of the tumor which was at the lower part of the thigh was found to give evidence of fluctuation and pulsation; there was also a bruit heard with a stethoscope. On December 18th. the mass broke in two places, and discharged a large amount of grumous blood together with solid masses of bloodclots. Following this, there was a subsidence of fluctuation and pulsation. Amputation of the thigh was performed, and thirteen days after the patient died. At the autopsy it was found that the tumor was an aneurism. At its upper part there was a solid mass which was at first thought to be a neoplasm, but, on more thorough examination, proved to be a blood-clot. The popliteal artery above the sac was obliterated, and it was a mystery how pulsation could be accounted for without communication being made out with arterial branches, and, moreover, without the mass being superimposed on the artery."

The description of the appearances of the tumor is not very full; no doubt it was fed, as in my case, by anastomotic branches, which joined the popliteal immediately below the tumor. The existence of pulsation and a bruit, with fluctuation, made the case more like an ordinary aneurism than my own. Its points of resemblance are the consolidated tumor which increased in size the former cure of the aneurism by compression, and the obliteration of the artery above the tumor.

Mr. Erichsen (*System of Surgery*, vol. ii. p. 22, ed. 1869) figures a somewhat similar case which was mistaken for a painful solid tumor. The leg was amputated, and the tumor proved on dissection to be a consolidated aneurism pressing on the popliteal nerve. From the plate of the aneurism which is given, there appears to be a large cavity near the surface of the tumor which contained a recent coagulum, and which must, during life, have been filled with fluid blood.

Mr. Holmes, in his article on aneurism (*Holmes's System of Surgery*, vol. iii. p. 43, ed. 1883), says:—

"I can refer to at least three cases, one a preparation in the St. George's Hospital Museum, another in the Museum of the Royal College of Surgeons, and a third in private, in which the limb was amputated for a large tumor in the popliteal space, believed to be malignant, and which turned out to be cured aneurism, and I know that this has occurred in several other instances. In some of the cases, however, the pressure of the tumor had produced gangrene, so the operation was necessary."

Mr. Prescott Hewitt (*Medico-Chirurg. Trans.*, vol. xxix. p. 75) relates an interesting case of aneurism of the femoral artery, which was cured by ligature of the external iliac, and where, after all pulsation and sound had ceased in it, the tumor gradually increased till it reached the size of the head of a full-grown fœtus, and was thought by many of the surgeons to be a tumor of a malignant character. The man died of phthisis, and the *post-mortem* examination revealed a consolidated aneurism and obliteration of the femoral above the tumor.

Mr. Marrant Baker, in an article on "Aneurisms which do not Pulsate" (*St. Bartholomew's Hospital Rep.*, vol. xv. p. 79), mentions three cases where the leg was amputated for supposed malignant tumors, which turned out to be consolidated popliteal aneurisms. Two of these cases

were referred to Mr. Maunder at a discussion of the Clinical Society (*Lancet*, March 16, 1878).

Dr. Dunning (*Medical Record*, August 5, 1876) reports a case of popliteal aneurism mistaken for semi-malignant growth, in which the surgeon attempted to remove the tumor, the case terminating fatally from hemorrhage a few hours after the operation. In this case the tumor was hard, inelastic, having no pulsation or bruit, and was slowly increasing in size. The tumor, as examined after removal, was found filled with concentric layers of fibrin occupying its entire space, save a small cavity in the course of the artery.

Mr. Oliver Pemberton (*Lancet*, vol. ii. p. 120, 1877) reports a case of femoral aneurism, for the cure of which he tied the external iliac. The tumor disappeared, and for two and a half years the man remained perfectly well, when suddenly he found the seat of the aneurism enlarging to the size of a man's fist. It continued to grow slowly till, when the case was reported, it measured five inches in length and breadth, and three in depth. It was free from pulsation and pain. He looked upon the case "as an instance of the production within the walls of an apparently cured aneurism of deposits of fibrin, continually increasing in amount, always feeling solid, and never giving rise to pulsation or sound." He mentions, shortly, two other somewhat similar cases.

These cases which I have quoted will give some idea how difficult may be the diagnosis between a consolidated aneurism and a sarcomatous tumor. Pirogoff says:¹—

"If I were asked what signs I hold most decisive of the existence of an aneurism which does not pulsate, I must confess that, if there is no bruit to be heard at any part of the tumor, I know of no other than these two: (1), collapse of the swelling, sometimes only to a slight extent, when the main artery is compressed between the heart and the tumor; and (2), if the pulsation of the artery can be felt upon the surface of the tumor, an unnatural extension of its impulse, for example, over twice the usual breadth of the vessel. But, in order to satisfy myself of these two phenomena, it is, of course, necessary to examine the case repeatedly, and with the greatest attention. The diagnosis must not be founded on a single examination."

Barwell (*International Encyclopædia of Surgery*, vol. iii. p. 398) "does not know of any positive signs by which to distinguish between a solidified aneurism and other hard tumors." He says, "the great aid to diagnosis will be the more or less globular form of the tumor, its isolation from adjoining structures, and the fact that it does not increase (if really solid) but rather decreases." Now in my case all the signs by which a diagnosis is usually made were wanting, there was no fluctuation, pulsation, bruit, or increased arterial impulse, and the tumor steadily increased in size. The history of the case certainly pointed to aneurism, but the clinical signs did not; in fact, there was not a single symptom which

¹ *Klin. Chir.*, quoted by Holmes, *St. George's Hosp. Rep.*, vol. vii. 1874.

pointed to aneurism, so that an accurate diagnosis was, in my opinion, impossible. Had a diagnosis of consolidated aneurism been made out, could any other means besides amputation have been adopted for relief? I think not. Ligature of the superficial femoral above the tumor would not have availed, owing to the obliteration of that vessel. Compression of the common femoral on the pubis would have been equally useless, as cutting off the blood from this source had been practised before, and the circulation was carried on, probably, by branches of the internal iliac artery anastomosing with the perforating arteries of the profunda and articular branches of the popliteal. Removal of an aneurismal tumor by dissection has recently been successfully practised by Mr. Wm. Rose, Surgeon to King's College Hospital, London. In this case the aneurism was a femoral one, and Mr. Rose had failed to cure it by digital compression, ligature of the external iliac, or rest and iodide of potassium, so he determined to dissect out the tumor, tying all the communicating vessels as he met with them. The aneurism being a small one, only the size of a lemon, the operation was successfully performed, hemorrhage being prevented by Esmarch's bandage and Davy's lever (*Lancet*, Dec. 22, 1883). In my case this method of treatment would have offered little chance of success, owing to the immense size of the tumor and the already badly nourished condition of the limb, as evidenced by the large indolent ulcer of the leg. So, had the nature of the tumor been certainly diagnosed, it seems to me that amputation would have been the most suitable, and probably the only means, by which the patient could have been relieved from his sufferings and cured of his disease.

There are several interesting and important points connected with the tumor itself. The fibrin was not arranged in layers but was simply one uniform mass,¹ and, to the naked eye, looked exactly like a new growth. The orifice of the aneurism was at the distal end of the tumor, and the blood therefore flowed from below up, with, of course, a lessened stream; the circulation owing to the obliteration of the femoral above the tumor being carried on by collateral branches. As there was no cavity in the tumor the absence of pulsation and bruit is explained. It is, however, difficult to understand in what manner the tumor increased in size, and how the new fibrin was deposited; probably the mass was in a spongy condition so that the blood could easily permeate it, and thus fibrin could be slowly deposited.

¹ Mr. Wagstaffe (*Path. Soc. Trans.*, vol. xxix. p. 73), reports a case of popliteal aneurism cured by Esmarch's bandage, in which, after death, he found the clot contained within it solidified throughout and well organized.

pinion,
de out,
relief?
would
ression
less, as
and the
d iliac
la and
nor by
Rose,
eurism
l com-
um, so
cating
he size
being
c. 22,
little
ready
dolent
diag-
table,
been

h the
y one
owth.
d the
eam;
umor
n the
ever,
and
ongy
could

lital
con-



