Original Articles.

CASES OF POPLITEAL ANEURISM.¹

BY C. B. PORTER, M. D.

IN order to better appreciate the advantages of the present methods for the treatment of aneurism, it will be well to review in a hasty manner the various measures which have been devised from time to time for its cure. According to Guthrie, "Aetius, who lived thirteen hundred years ago, recommended, for the cure of brachial aneurisms, that the artery should be exposed near the armpit; and that two ligatures should be applied to it, a little distance from each other, when the artery should be divided between them. If he had stopped here, he would have performed the modern operation for aneurism, and have left nothing for posterity to discover. He directed, however, that after this had been done, the sac should be laid open and completely emptied, and the artery sought for, and raised with a blunt hook. A ligature was then to be applied above and below the opening into it, and the vessel was afterwards to be divided." "It is very remarkable that he should have combined in one the two methods of proceeding of modern times." "Paulus, a century later, recommended the cutting out of the tumor and its contents after opening it, having previously applied a ligature above and below it." Peter Keisler in 1644 operated upon popliteal aneurism by first opening the sac, then introducing a probe into the upper end of the artery, and applied a ligature above to avoid the diseased and dilated part of the vessel; the cavity was then filled with lint dipped in vinegar and water, and the whole bandaged.

In 1646 Severinus operated upon femoral aneurism by laying open the sac, evacuating its contents, and placing a ligature above and below the opening in the artery.

Mr. Hunter, in 1785, proposed and practiced the operation which justly bears his name,—the ligature of the artery on the proximal side of the aneurism. In his first operation he applied four ligatures on the artery drawn with varying degrees of tightness, but the process of separation was so slow, and their discharge subsequent to the healing of the wound was the source of so much inconvenience, that in his second operation he tied the artery only once.

Without entering into a recital of the various claims to the first proposal to tie the artery on the distal side of the aneurism, which is known in different countries as that of Brasdor, Wardrop, or Desault, and claimed for them by their countrymen respectively, I find that Guthrie says that the operation owes its origin to Braddon and Desault, but that Deschamps performed the first operation on a femoral aneurism, and Sir Astley Cooper on an aneurism of the external iliac, both of which resulted fatally.

Down to the middle of the eighteenth century pressure directly applied to the aneurism by means of a variety of instruments, bandages, etc., was the usual method of cure, and this was limited to traumatic aneurism at the bend of the elbow, the result of a wound of the brachial artery in venesection. Heister, according to Bellingham, was the first to propose the extension of this mode of treatment to popliteal aneurism,

and although he never put this method into practice, he treated a case of wound of the femoral artery on similar principles, which resulted favorably, though the patient wore afterwards a leathern belt, with an iron plate attached, covering the seat of injury. Guittani, an Italian surgeon who flourished about the middle of the last century, was the first who successfully treated popliteal aneurism by compression, his first case being in 1765. "The patient, aged forty, was admitted into the Hospital of the Holy Ghost towards the end of August, 1765, laboring under popliteal aneurism. The tumor was about the size of a large goose egg, was hard and resistant to the touch, had a strong pulsation, and was attended by pain, swelling of the leg and foot, and fever. The patient was directed to remain in bed, was put upon low diet, and bled several times. Towards the end of September the aneurism had ceased to increase, pain was nearly gone, the pulsation had diminished, and the swelling of the limb had in a great measure subsided. Guittani was obliged to leave Rome at this period to accompany the Pope on a journey. On his return, in November, the tumor had not increased, and, the oedema of the limb having disappeared, he determined to try the effects of compression. Having first covered the tumor with lint, he laid two oblong compresses over its centre, which crossed one another and passed round the limb above and below the knee; another compress was laid along the course of the femoral artery up to the groin. He then took a long roller, three fingers' breadth, with which he encircled the knee, commencing above the centre of the tumor and passing it above and below the joint many times; it was then carried up the thigh to the groin, and for further security he gave it a turn round the body. The whole was moistened with spirits of wine, the patient was bled, and a rigid diet enforced. The bandage was not disturbed for eighteen or twenty days, and then only in order to be tightened, and venesection was repeated whenever the leg or foot swelled." In three months from the first application of the compression the patient left the hospital perfectly well. The treatment in the case quoted extended over a period of three months, and was what would be called direct or immediate compression applied to the aneurismal tumor, and in some cases the whole extremity was bandaged. Treatment of popliteal aneurism by genuflexion was first brought to notice by Mr. Ernest Hart in 1858, though others had used it before him. Flexion seems applicable only to small aneurisms at the bend of the elbow, in the popliteal space, and possibly in the groin. Mr. Lawson Tait says: "The plan by flexion I have tried, and should say of a man who had his aneurism cured by it that he had powers of endurance beyond anything else I know. I have tied up my own leg and the healthy legs of others, and I have not yet seen one who could stand it an hour, while the three men with popliteal aneurism in whom I have seen it tried always let down their legs within ten minutes after they were put up." Treatment by manipulation, by coagulating injections, galvano-puncture, acupressure, is available in cases where other and better methods cannot be used or have failed.

Esmarch rubber bandage and tourniquet have been used a number of times successfully. The first case reported, by Dr. Walter Reid in 1875, was one of popliteal aneurism. The bandage and rubber tubing, having been kept in place fifty minutes, were removed on

¹ Read before the Boston Society for Medical Improvement, April 10, 1882.

account of severe pain, after which compression was applied for two hours, when the aneurism was found to have ceased pulsating. Dr. Lewis A. Stimson, of New York, in the American edition of Holmes's Surgery, gives fifty-two cases treated by this method, with twenty-eight cures, twenty-two failures, and two deaths; that is, twenty-eight successful cases to twenty-four unsuccessful. The subject of treatment of aneurism by compression on the proximal side of the tumor I have reserved to the last, as it is the one to which I wish to call the attention of the Society especially this evening and in conjunction with anæsthesia by ether. The first case which I can find of this method, chloroform being used, however, instead of ether, was published in the *Dublin Medical Press*, March 29, 1865, by Dr. Mapother, — a Case of Ilio-Femoral Aneurism cured by Pressure on the Common Iliac and Superficial Femoral Arteries under the Influence of Chloroform. A Signorini's abdominal tourniquet was applied above the tumor one inch above the umbilicus, and a Skey's tourniquet on the common femoral below the tumor. Compression was maintained for four and a half hours without interruption, when, on removal of the instruments, the aneurism was found to be solid and pulseless.

Another case, by the same writer, of popliteal aneurism, was cured by proximal compression under chloroform for seven and a half hours, the flow of blood from the sac being impeded by tight bandaging and elevation of the leg; in other words, proximal and distal compression at the same time. Holmes states that there are "two theories as to the best method of making compression in the cure of aneurism: one that a slow current through the sac is, if not necessary, yet desirable, in order to the deposit of laminated fibrin, . . . and this involves protracted treatment; . . . the other that if the blood can be completely arrested in the sac by compression stopping the circulation absolutely for some hours, the soft coagulum which is at first formed will gradually go on to complete induration and lamination, and the cure will be effected much more speedily and much more surely." It is upon the latter theory that the cases which I have to report to-night have been treated. They are all cases of popliteal aneurism. The treatment was prosecuted from beginning to end under anæsthesia by ether.

CASE I. J. H. D., aged forty-nine, entered hospital September 22, 1877, with the following history: One year ago the patient sprained his right leg so that he could not walk for four or five days. Four weeks ago his calf began to swell just below the popliteal space; swelling has steadily increased since then. He is unable to straighten the leg, but holds it slightly flexed.

Examination shows the right leg from knee to ankle to be much larger than the left. On placing the hand over the chief swelling just below the popliteal space distinct pulsation is felt, synchronous with the pulse. Pressure upon the femoral in Scarpa's triangle stops the pulsation. A thrill is also felt with the hand, and a *bruit* is distinctly heard. Patient has considerable pain in leg, especially on movement.

Measurements.	Above Ankle.	About Calf.	Above Calf.
Well leg	8½ inches.	12½ inches.	11½ inches.
Affected leg	10¼ inches.	15 inches.	15 inches.

Patient was put upon extra diet, with tinct. ferri chloridi twenty drops every three hours. Absolute rest in bed.

September 25th. Patient has great pain, relieved at night by opiates.

September 26th. Some œdema of leg; bandage loosely applied over cotton batting, and leg elevated on an inclined plane.

September 29th. Bandage removed; swelling above ankle three fourths of an inch less than before bandaging.

September 30th. Operation. Patient under ether. Ether given very gradually, tourniquet applied over femoral artery in Scarpa's triangle, the point of pressure being protected by eight thicknesses of cotton batting. Two tourniquets were used, the point of application being changed every half hour. The tourniquet was kept on for about nine hours, two pounds of ether being used during that time. The *bruit* ceased at end of six hours, pulsation at end of eight hours. Ene-mata (beef tea one ounce, brandy half an ounce) every two hours. Pulse, body temperature, and surface temperature over tumor taken every hour. Patient came out of ether very well, being sensible five minutes after reaching ward.

October 1st. Doing well, no *bruit*, no pulsation. October 2d. Doing well, slight pulsation, no *bruit*. October 3d. More decided pulsation, still no *bruit*. October 4th. Pulsation has returned three days after first compression. Operation. Ether used. Tourniquet applied as before, for six hours. Pulsation ceased at end of four and one half hours. October 5th. No return of pulsation, leg bandaged loosely. October 6th. No pulsation, leg bandaged tightly. October 10th. No pulsation. Patient has but little pain in leg. October 13th. No pulsation. Leg much straighter than before compression. October 15th. Doing well. October 22d. Seventeen days after second compression. Slight pulsation over tumor. Tourniquet reapplied and kept on for nine hours, pulsation then having ceased for two hours. October 24th. No return of pulsation. October 27th. No pulsation, tumor steadily diminishing. December 13th. Patient allowed to get up and walk a little about ward. December 25th. Thirty-one days after last compression. Nothing abnormal about leg except simple œdema relieved by daily bandaging. December 28th. Swelling of knee, patella floats, evidently a large effusion into joint. No pain. Leg placed upon ham-splint, compressed sponge to knee. January 10th. Effusion much reduced. Splint removed. Patient can walk well, only a little weakness. January 20th. Effusion diminishing slowly. January 25th. Discharged well, less than four months from first operation.

CASE II. M. J. L., aged thirty-five. Entered hospital May 31, 1879. Patient is a mill operative, and has always been healthy. About eighteen years ago had a sore on his penis, but he says that it was followed by no eruption, his hair has never fallen out, he has no pain in bones and no nodes. Three months ago he first noticed a bunch in left popliteal space. This came on without known cause, and he cannot remember that he has ever received a blow or strain in that region. The tumor has become more and more painful, and now the leg is almost useless, the knee is slightly flexed and swollen, and the pain keeps him awake at night unless he has an opiate. The tumor is about the size of a small orange, and gives a well-marked expansile thrill

to the touch synchronous with the pulse, and a well-marked *bruit* may be heard and its thrill felt.

Measurements.	At Calf.	Below Patella.	Middle Patella.	Above Patella.
Right Leg .	11½ inches	10½ inches.	13½ inches.	12 inches.
Left (affected) Leg.	12½ inches.	12½ inches.	14½ inches.	14 inches

June 3d. It being decided to attempt a cure by instrumental compression under ether, the patient was etherized at 8.27 A. M., and a pair of Massachusetts General Hospital femoral tourniquets were applied, alternating every fifteen minutes, one tourniquet being kept on until the other was applied. All pulsation was stopped, and heaters wrapped in blankets placed about the leg. When the upper tourniquet was on, the leg became quite purple from pressure on veins about the saphenous opening, but on changing, this almost entirely disappeared. A thick pad of cotton-batting was placed under the block of the tourniquet. Patient was kept under ether until seven P. M.; or ten hours and a half, taking two pounds and two ounces of ether. Six nutritive and stimulating enemata were given during the time. Ether given at 8.20 A. M. Tourniquet applied at 8.27 A. M. Tourniquet changed at 8.45 and every fifteen minutes after. Enema of beef-tea, one and a half ounces, milk one half ounce, at 11.20 A. M., one, three, and four P. M. Tourniquet let up for first time at 1.25 P. M. Aneurism still pulsates. Reapplied. Same at four P. M. Reapplied. At five P. M. Enema as before with brandy one half ounce, and urine was drawn. Nothing abnormal about urine except large increase in uric acid. At six P. M. Tourniquet let up. Pulsation. Reapplied. The pulsation was feeble, however, and did not appear for nearly a minute after tourniquet let up. Enema of beef-tea and milk, of each one half ounce, brandy one ounce, quinine two grains at six and at seven P. M.

At seven P. M., pulse and respiration were so rapid, and temperature so high and rising rapidly, and the patient appeared to be in such poor condition, that the ether was stopped and tourniquets removed. No pul-

sation could be felt in tumor, and leg was bandaged with cotton batting from toes to groin. The temperature, pulse, and respirations were taken every hour during the treatment. The temperature, after the first four hours, commenced to rise, and rose quite steadily until it reached 103.8° F., at which point the ether and compression were removed, when it commenced at once to decline and reached the normal point in twelve hours. The pulse marked 180 per minute, and the respirations 48 at the time the thermometer reached the highest point.

June 4th. Day after operation. Patient comfortable this morning. No pulsation in tumor. There is a blister on back of calf and a suspicious looking place on heel. June 7th. Patient kept still in bed. The two places spoken of above were apparently due to burns from heaters and two sloughs are the consequence about the size of pennies. June 23d. Sloughs slowly separating. June 25th. Sloughs removed; dressed with absorbent cotton and resin salve. July 15th. Since last entry ulcers have been healing slowly. Patient has been in bed until within a week. There has been no return of pulsation in tumor. Forty-two days after operation discharged well.

CASE III. E. P., aged forty-three, entered hospital June 21, 1880. Last February patient first noticed a lameness in left knee, and soon after discovered a pulsating tumor in popliteal space. The tumor continued to grow in size, and became very painful, the pain being felt mostly in the foot. He put himself under the care of a clairvoyant, under whose treatment he said he was cured so that he was able to go about, and that six weeks ago he was walking. At that time the tumor suddenly started up, and increased rapidly in size. Was confined to bed, and kept the knee flexed. Now there is a large pulsating tumor in left popliteal space, occupying the entire space, and extending up into thigh and down into calf of leg, making the tumor about six inches in length. He keeps the knee flexed all the time. General condition of patient is bad; he is very weak, and has no appetite, but the condition of the aneurism seems to demand immediate treatment.

June 25th. Operation under ether; commenced with ether at 9.30 A. M.; thigh tourniquet was put on femoral artery at 9.50 A. M., the tourniquet was put on just tight enough to stop all pulsation in the aneurism; a pad of cotton batting was placed over the thigh; the tourniquet was shifted every half hour. Nutritive enemata were given every two hours, but only one was retained. Later, the patient was allowed to partially come out of his ether, and at these times he was given brandy and milk by the mouth. After he had been etherized about six hours there was a marked change, pulse was very weak in right, and could not be felt at all in left wrist; the respirations were quick and labored. Ether was stopped at eight P. M.; the tourniquet was let up to see if the tumor pulsated, at one, four, six, and eight; at six there was only a feeble pulsation, at eight P. M. there was none; patient came out of ether well, and was perfectly conscious, but was very restless, and complained of being tired; no pain; foot was wrapped in cotton, and a heater put to it as it was of a suspicious purple color and very cold; patient was stimulated, and given as much nourishment as he could take during the night, pulse became stronger, and it was perceptible in left wrist.

June 26th. Patient conscious, but delirious at times; very restless; was failing fast, and died the second day

after operation from exhaustion, the leg and foot looking badly, though gangrene was not evident. No autopsy allowed.

CASE IV. E. K., aged thirty-nine, entered hospital April 14, 1881. In popliteal space was an aneurism as large as a large orange. The expansile pulsation was very marked. Had never been treated. Foot and leg were in good condition. Some pain lately from pressure of the tumor.

April 15th. All preparations being made, ether was started and tourniquet applied at 11.30 A. M. Nourished by rectal injections of brandy and milk. Pulse, respirations, and temperature taken half hourly. The tourniquet was let up every three hours, and pulsation found until twelve, midnight. The tourniquet was kept on until one A. M., thirteen and one half hours. Four pounds of ether were used, of which he took not more than one half. His temperature rose from 96° F. to 99° F., and stayed there; pulse from 80 to 90; respiration from 25 to 30. At twelve, midnight, violent hiccough came on, and ether was stopped, and hiccough relieved by morphia, one eighth of a grain subcutaneously. April 16th, at two A. M., pulsations began again, but his condition did not warrant reapplication of tourniquet; stimulated; very little pain during the day. April 18th. Feeling all right; no sloughs from pressure or heaters. April 19th, 5.30 P. M. Tourniquet applied, examined every two hours; pulsation stopped at 7.40 P. M.; tourniquet continued until nine P. M.; no pulsation again until 11.30 P. M., when it began, but not as strongly as at first; the tumor seems much more solid, and there are evidences of collateral circulation beginning. April 20th, five days from first operation. Feeling well, and of good courage; ether began at 4.30 P. M.; pulse did not rise above 84, temperature not above 99.5° F., and respirations not above 28; took about two pounds of ether; took brandy and milk by mouth, coming out of ether enough for that; tumor pulsated until five A. M. of April 21st; tourniquet kept on until seven, then Esmarch applied; there was no pulsation in tumor until two P. M., then very slight; the Esmarch was firmly applied, but gave so much pain ether was necessary until ten P. M., there was then pulsation. April 22d. Patient kept leg flexed, controlling the pulsation, but this was so painful it was frequently necessary to extend the leg. April 23d. Somewhat discouraged and used up from ether; collateral circulation well developed; leg somewhat swollen, but not cedematous. April 25th. Tourniquet applied at ten A. M.; borne for two hours without ether; pulse did not rise but once above 90, temperature not above 99° F., and respirations not above 30; took good quantities of milk and brandy by mouth; tumor pulsated until April 26th, five A. M.; tourniquet was kept on until eleven A. M., twenty-five hours; the tumor kept perfectly solid, but the collateral circulation was so developed that the surface of tumor was covered by arteries, whose pulsation gave movement to the tumor.

April 27th. Feeling rather weak from prolonged etherization, but coming up well under stimulants; no signs of sloughing. April 29th. Swelling of leg diminished; feels well. May 1st. Impossible to tell if tumor is pulsating, or if pulsation is due to posterior tibial. May 3d, seven days after last compression. It was decided that there was faint pulsation in tumor, which is very hard, and diminished to about the size of a very small orange; there is none of the expansile

character about it; there are several large arteries running over the face of it. May 12th. Given tourniquet, which he applied himself, keeping up pressure from one half to two hours in one place, and then varying it; the pain is severe, but he pluckily bears it. May 14th, five P. M. The above treatment has been kept up since twelve, and now on letting it up there was no pulsation; immediately reapplied. May 15th. Pulsation reappeared as soon as tourniquet let up; continue tourniquet. May 22d, thirty-seven days after first compression. Tourniquet let up, and not resumed. June 12th. Since last record there has been no resumption of pulsation. June 22d. Goes about in rolling-chair. July 1st. Goes about on crutches.

CASE V. J. P., aged sixty-five, entered hospital April 28, 1880. Four months ago patient was accidentally shot, the bullet passing through his right leg, just above the knee, to the inner side of the bone, entrance in front and exit behind. It was not until one month after the accident that he first noticed a pulsating tumor in the course of the femoral artery, at its lowest point. At the advice of his physician he kept absolutely quiet in bed, and applied pressure over the femoral artery, part of the time with his thumbs, and part of the time he had relays of men to take turns at pressing. He also used a shot-bag. Now there is a tumor on inner and posterior aspect of thigh, just above the knee, and over the inner ham-strings. The tumor is hard, does not pulsate, measures sixteen and one fourth inches around at largest point. Knee is flexed at a right angle.

May 1st. Tumor is diminishing in size; kept in bed, and not allowed to get out under any circumstances. May 10th. Flannel bandage has been applied from the toes to above tumor a few times, but it is so uncomfortable that he will not keep it on for any length of time. June 10th. Patient allowed to go about in a wheel-chair; condition of aneurism as before. June 13th. Patient given crutches. June 30th. Discharged; the tumor solid, and slowly diminishing in size.

In the method described in the cases reported, the principal dangers and obstacles to the treatment of aneurism by compression are either done away with entirely or reduced to the minimum. The pain of pressure sufficient to control pulsation can be endured without anæsthesia only for a short time by the most heroic. The danger of slough from continued pressure is avoided by the use of two tourniquets, shifting the point of pressure frequently, and by a thick pad of cotton batting placed between the block of the tourniquet and the skin, thus supplying elastic compression, which I consider a very important adjuvant. The shock and exhaustion of the operation is reduced to the minimum by anæsthesia with stimulating and nutritive enemata. The latter, in Case III., which terminated fatally, were not retained. Surrounding the affected leg with heaters supplies the warmth which is essential to its vitality, and which for the time being is reduced by the diminished supply of blood.

To briefly summarize: Case I. required the tourniquet three different times, three, six, and nine hours respectively, in all, twenty-four hours.

Case II. Tourniquet ten and a half hours.

Case III. Tourniquet eight hours and ten minutes.

Case IV. Tourniquet five times, thirteen and one half, three and one half, fourteen and one half, nineteen, and five hours respectively, with a few short ap-

plications without ether, in all, fifty-five and one half hours.

Four complete recoveries and one death in a bad case, which would probably have resulted fatally whatever had been done; though in treating another similar case, I think I should do the old operation of laying open the sac, evacuating the contents, and tying the artery above and below the tumor, with the addition of antiseptic precautions.

The method of proximal compression seems applicable to circumscribed aneurism of the extremities; the method of laying open the sac and tying above and below, to diffused or dissecting aneurism where the sac has ruptured; and one or the other should in most cases supersede the Hunterian operation.

In aneurism of the iliacs, the carotid or subclavian, or both of the latter conjoined, Brasdor's operation, distal ligature, or distal compression are the expedients available by the surgeon, all operations with the knife to be performed with the strictest antiseptic precautions.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M. D.

SYPHILIS OF THE JOINTS.¹

RICHET, in 1853, in a monograph, described the effect of syphilitic virus acting upon the joint and altering the synovial membrane and the bony ends of the joints. The bone is affected at the later stages of the disease, and ankylosis may result. Brochin, Simon, Virchow, Hurt, Volkmann, Lancereaux, reported cases, the latter demonstrating the lesions by autopsy. He found the larger joints more liable to be affected than the smaller, and that the knee-joint is attacked by preference. The lesion in the subsynovial cellular tissue is regarded as being gummatous; the synovial membrane was not the only part affected, the cartilages being eroded in places, and a serous effusion in the joint being also noted.

Syphilitic arthropathies develop slowly; they do not tend to suppuration, and under specific treatment may end in recovery. A form of syphilis of the joint is to be met where the disease originates in the bone, this being followed by a hydrarthrosis.

Lücke met with well-marked cases in syphilitic patients, where thickening of the capsule and increase of the synovial fluid was found, the whole disappearing under mercurial inunction. The course of these cases resembled that of the ordinary chronic fungous joint inflammation.

Oedmasson and Risel have both had opportunity of examining cases of the affection, post mortem. The former found among other characteristic syphilitic bone lesions, — namely, extensive osteitis, periostitis, exostoses, necrosis, — a synovitis of the knee. The latter found, besides extensive evidence of ostitis, gummosa in the fingers and toes, hyperplastic enlargement of many of the long bones, cicatrices of old ulcerations of the cartilages of the size of a pea. In a second case the anatomical appearances were those of an extensive caries of the knee-joint, a condition which developed during life gradually, without suppuration.

Fournier states that the specific pseudo-rheumatism

¹ Gies, *Deutsche Zeitschrift f. Chir.*, 1881, page 605.

is to be distinguished from ordinary rheumatism chiefly by the mildness of its course.

Zeissl, from his extensive experience, is led to believe that the specific joint affections are quite rare. On the average one thousand syphilitic patients pass annually under his observation, and frequently no case is seen during the whole year. In the few which he has observed, the knee and ankle were the joints most frequently affected; the acromial, elbow, and wrist joint were less frequently seen. The hip joint was never affected. Some of the joints were recently attacked and accompanied by severe pain; others were chronic, characterized by hydrarthrosis, tumor albus, and degeneration of the joint, and sometimes complete ankylosis. In a majority of the cases, he found antisiphilitic treatment to be followed by no special benefit.

Kohn distinguishes between the syphilitic congestion of the joint (the arthritis subcuta syphilitica) and a chronic form, which develops in the course of the disease. The first is accompanied by more pain than the second; the latter frequently leaves behind it crepitation on moving the joint, which may be so marked as to be heard at a distance.

According to the observations of Voisin, the joint pains which are observed in the first stages of syphilis are to be classed as a true arthritis. The true hydrarthrosis develops at a later stage. Sometimes the inflammation of the joint follows a contusion.

Similar to this specific synovitis is the syphilitic inflammation of the sheaths of the tendons. This appears usually in the secondary stages of the disease.

Gies reports an interesting case (with autopsy) of a peculiar arthropathy of the knee-joint occurring in a syphilitic patient, where deep destruction of the cartilages was to be seen, and a thickening of the synovial membrane. The appearances were different from the ordinary fungous disease, resembling more those of arthritis deformans, from which latter it differed in the absence of alterations in bone.

Gies classifies the specific joint affections as —

- (1.) Acute, occurring during the first stage of syphilis.
- (2.) The arthropathies accompanied by gumma.
- (3.) Subacute affection of the joints without marked evidence of gummata.

TREATMENT OF OLD FRACTURE OF THE VERTEBRA.

Küster² adds to König's cases of fresh fractures of the spine treated by the plaster-of-Paris jacket four less recent cases treated successfully by extension.

He believes that recovery is more readily and more completely gained by this treatment than by simple confinement to bed. He advises an attempt at reposition under ether, to be made by extension or direct pressure. If reposition is successful, extension should be continued.

The application of a plaster jacket is attended with difficulty and danger on account of sloughs; a felt jacket which is adjustable may possibly be of more advantage.

ON THE SO-CALLED RUPTURE OF THE INTERNAL LATERAL LIGAMENT OF THE KNEE-JOINT.³

Jersey is of the opinion that the injury which is called the rupture of the internal lateral ligament of

² *Archiv f. Klin. Chirurgie*, 1881, page 841.

³ *N. Y. Med. Record*, June, 1881, page 663.