

the cord or its membranes. The only evil consequence was that the patient could not retain her water so long as before the operation, and complained of long-continued pain in the rectum after defecation; but these troubles had also, according to later accounts, almost disappeared at the end of the following four months. It is almost superfluous to point out the extreme interest of this case, not only because of the fact that the spinal canal was freely opened, and must have remained open for some time, without any mischief resulting to the cord or its membranes, but also because it indicates a fact which should form part of the creed of modern surgeons—viz., that operative surgery has not by any means reached its limit. Professor Volkmann has added one more region to those to which the surgeon's knife is admissible. Is it not almost certain that the surgery of the future will deal with other and more vital parts? And lastly, it may be wise to reflect that so severe an operation could hardly be undertaken by the boldest surgeon without a firm belief in the efficacy of the safeguards which modern improvements have introduced in the treatment of wounds.—*Med. Times and Gaz.*, Dec. 23, 1876.

34. *On Intra-articular Injuries of the Knee.*—Prof. DITTEL, of Vienna (*Stricker's Jahrbücher*, Hft. 3, 1876), has obtained from experiments on the dead body and from clinical observations, the following points of information with respect to intra-articular injuries of the knee:—

"1. The crucial ligaments are never torn through; but by violent movements of the bones carried beyond the functional limits they may be separated at their attachments. It is almost always the femoral end that is torn away—that of the posterior ligament by over-extension, that of the anterior ligament by over-flexion.

"2. The lateral ligaments may, by hyperabduction or hyperadduction, be torn through or detached either at the femoral or at the tibial end. There will be a separation in the former case of a scale of bone, in the latter of the corresponding semilunar cartilage. The lateral ligaments remain intact under those conditions which produce lesions of the crucial ligaments.

"3. Through violent movement the anterior crucial ligament may, as has been shown in a clinical instance, be torn away at its tibial end, carrying with it the spine of the tibia together with a disk of bone.

"4. Through violent movement in an opposite direction, the posterior crucial ligament, together with a portion of bone, may be torn away from the tibia.

"5. Considerable displacement of the tibial epiphysis forwards in a flexed condition of the leg corresponds to the lesion of the anterior crucial ligament; displacement posteriorly, and into the popliteal space corresponds to the lesion of the posterior crucial ligament.

"6. An abnormal range of the movements of abduction and adduction corresponds to lesion of the lateral ligaments. Whether these be torn through or detached at their insertion may be determined, if there is no swelling of the soft parts, by digital examination and from the presence or absence of a depression.

"7. That separation of a crucial ligament at its long attachment should take place at its femoral end, and hardly ever at its tibial end, is probably due to the fact that the femoral insertion is small, quite circumscribed, and surrounded by articular cartilage, whilst the tibial insertion sends out ramifying fascicles of fibrous tissue by which it is connected to the periosteum."

In discussing the diagnostic signs of fracture of the spine of the tibia, Prof. Dittel states that crepitation cannot be made out with any certainty, and that the free and abnormal mobility of the head of the tibia that one would expect after separation of the anterior crucial ligament, is not always evident in the living subject. The osseous fragment to which the lower extremity of this ligament always adheres may not have been completely detached from the head of the tibia, and in any case the surgeon would naturally be unwilling to convince himself as to the abnormal mobility, from fear lest by too energetic action he might cause pain to the patient, and convert what might probably be only a partial fracture into a complete separation. The most important symptom is a sudden and abundant accumulation of blood in the capsule, which after

the use of the aspirator will be rapidly renewed. Such bleeding may, the author grants, be the result of bruising and laceration of the vessels which supply the capsule and other ligaments, and probably also of a tearing of cartilage, but as bleeding from such sources is usually derived from the smallest vessels, one would not expect it to be renewed after aspiration. On the other hand, bleeding due to rupture of vessels on bone would persist, and form repeated accumulations, since such vessels cannot readily contract, and their orifices are not so likely to be closed at an early period through thrombosis. This renewal of the bleeding after the use of the aspirator in cases of injury to the knee, is regarded by the author as an important diagnostic indication of fracture, although it can afford no help in the determination of the precise seat of the injury.—*Brit. and For. Med. Chir. Review*, Jan. 1877.

35. *On Excision of the Joint between the Os Calcis and Astragalus.*—Excision of certain bones and joints of the foot for the removal of disease are now well-recognized operations, and the most recent experiences seem to confirm the advisability of such proceedings in suitable cases.

Although the existence of disease originating in and confined to the joint between the os calcis and astragalus has been long recognized by surgeons, no attempt was made to act upon the diseased joint alone, and remove by excision its affected surfaces prior to the operation shortly to be described. Some authors advise (*Edinburgh Med. Journ.*, Jan. 1877) that, in disease of this joint, either the entire os calcis or astragalus be excised, and the remaining diseased surface gouged away. Others, as the late Mr. Syme, advise, and have largely practised, amputation at the ankle for this disease.

The apparent difficulty of obtaining free access to this joint, and of removing its surfaces, is, no doubt, the reason which has hitherto prevented surgeons performing re-section of it; but having recently successfully practised a thoroughly efficient method of excising this articulation, Mr. THOMAS ANNANDALE ventures to describe (*Edinburgh Med. Journ.*, Jan. 1877) this method.

The importance of recognizing and treating early disease originating in this articulation, especially after suppuration has taken place, must be acknowledged, for, owing to the situation and connections of this joint, there must always be a peculiar risk of the gradual implication of the surrounding bones and joints.

Having carefully studied the anatomical relations of the joint under consideration, I found that its entire extent could be best exposed without injury to surrounding structures in the following way: The foot having been placed in the extended position, and resting on its inner aspect, an incision, commencing about an inch above the tip of the external malleolus, and carried along its posterior border in a curved direction to the calcaneo-cuboid joint, thoroughly exposes the posterior and external portion of the joint, when the peroneal tendons have been drawn outwards, and some ligamentous bands divided. This incision will be found to run along the inner border of the tendon of the peroneus brevis muscle. The anterior and internal portion of the joint can then be exposed by placing the foot still in the extended position on its outer aspect, and making an incision from the tip of the internal malleolus along the course of the tendon of the tibialis posticus, as far as the prominence of the scaphoid bone, drawing forwards this tendon, and carefully drawing backwards the other tendons and the posterior tibial vessels and nerve. By making the first incisions through the skin and cellular tissue only, and so ascertaining the exact position of the tendons likely to be injured, then cutting down through the periosteum to the bone, and with a periosteal scraper separating to a sufficient extent the periosteum, together with all the other superficial tissues, there is little risk of injuring any of the tendons or other important structures.

Both aspects of the joint having in this way been exposed, it will be found that by means of the chisel and mallet the articular surfaces can be easily and accurately removed, the posterior portion being removed through the external incision, and the anterior portion through the internal one. Should there be any disease in the hollow or fossa between the two articular surfaces, it can be