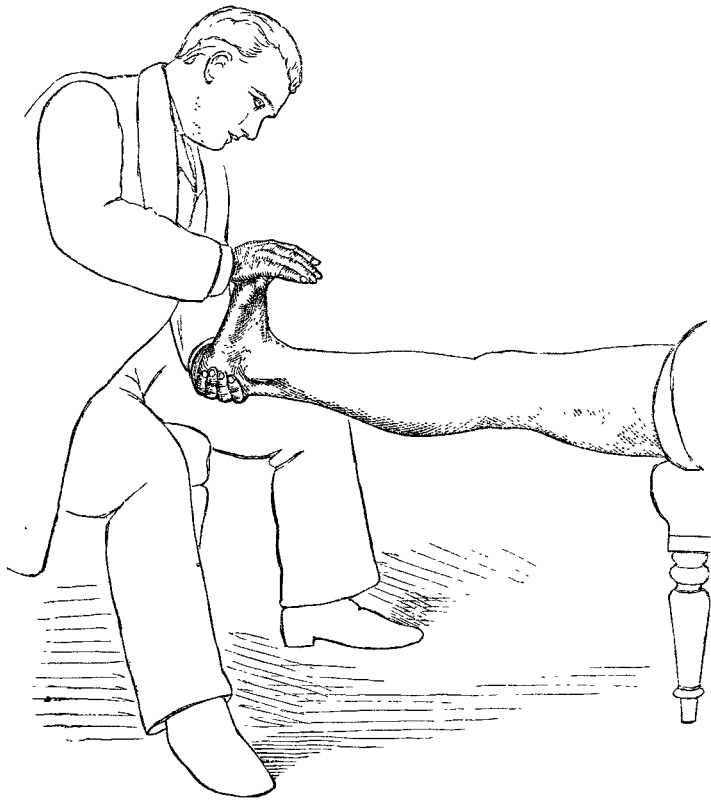


in question presents in a well-marked form certain rhythmic movements of the foot the occurrence of which will be often found to lend substantial aid to diagnosis in some forms of sclerosis. It will be convenient here to describe the phenomenon in detail, and I am able to show you this "foot-trepidation" in a man (C—) attending the hospital, in whom it is pronounced. The patient being seated, and the leg (with the foot bare) extended, the examiner, supporting the limb by one hand placed below the heel, seizes the anterior part of the foot, and by a sudden somewhat vigorous push towards the trunk brings the foot-joint into dorsal flexion. He immediately feels a downward pressure of the foot—a strong tendency for it to be pointed,—which he resists by continuing his pressure. Then comes a series of rapid and rhythmical movements (flexion and extension) of the foot, which continue as long as the pressure is kept up, or until the muscles are tired. (Occasionally, if the movements do not appear when the foot is dorsal flexed, a slight blow upon the tendo Achillis will have the effect of starting them.) Now, this patient tells us



that the trepidation is also apt to occur if he puts his foot into a certain position—if, e. g., he rests the anterior part of the sole upon the edge of a chair whilst he laces his boot. In doing this he evidently puts the tendo Achillis on the stretch. That it is to the strain upon the muscle through the medium of the inextensible tendon that we must refer the initiation of the movements, and not to any influence of the skin of the foot-sole, is proved, I think, very simply and completely by a case in which I first noticed this phenomenon six years ago. The patient, a man aged thirty, was paraplegic, and could not stand without support. Seated, with the foot upon the ground and somewhat advanced, so that the leg formed a slightly obtuse angle with the thigh, he remained still enough; but if with the aid of his hand he dragged the foot backwards towards himself, on arriving at a certain point the knee would be jerked vigorously up and down by the rising and falling of his heel, so violently indeed that the room would shake again with the rhythmic movements. It reminded me so much of the action of a man who works at a lathe that I have often since pointed out a similar condition in other patients under the name of the "turning-lathe movement." In the case described it will be seen that, as the foot touched the floor all along, the skin was necessarily subjected to the same impression throughout the proceedings; but it was only when, by drawing the foot under him, the tendo Achillis was pulled upon, that the movements were started. The possibility of an action upon the skin, therefore, being the exciting cause must be eliminated from consideration. (I may say that when I last saw this patient, two years ago, the foot trepidation continued to occur under similar circumstances.)

This phenomenon is so remarkable that it must have been observed by many besides those who have referred to it in writing. It bears a close resemblance to the symptom which Brown-Séquard called by the name of "spinal epilepsy,"<sup>2</sup> but I have not seen the movements stopped, as he describes, by suddenly and forcibly bending the big toe. Nor has it escaped the ever-watchful eye of Charcot.<sup>3</sup> Recently increased attention has been brought to bear upon it, and it has been minutely described by Westphal (in the paper already referred to), and also by Erb, who has bestowed upon it the convenient term "reflex clonus."<sup>4</sup> In all likelihood the process belongs to the same category as the patellar tendon reflex, although at the first glance it does not appear easy to reconcile with this view the apparently automatic recurrence of movements. What happens is probably this: The sudden dorsal flexion of the foot, by its strain upon the tendo Achillis, causes reflex contraction of the muscles of the calf, and the tendon is consequently pulled up. But the pressure of the operator's hand, although it has been overpowered for an instant by the contraction of these powerful muscles, is still continuing to act against the anterior part of the foot with the effect of again pulling the tendo Achillis, and this in its turn again excites contraction. The anatomical arrangement is such that the hand works a lever of the first class, the lower extremity of the leg-bones being the fulcrum, and the tuberosity of the os calcis marking the position of the weight. In consequence of the leverage the operator is able to exert a very considerable power upon the tendon which has been pulled up by the contracting sural muscles. The movements may be immediately stopped by bringing the foot into plantar flexion.

The patellar tendon reflex, as we have seen, is a phenomenon which occurs in health; the reflex clonus of the foot, on the other hand, cannot be produced, so far as I am aware, by dorsal flexion of the foot of a healthy person, although an approach to it will sometimes occur spontaneously in persons who are quite well. The occurrence of the foot-trepidation along with greatly heightened patellar tendon reflex, as in the case of the hemiplegic patient, is evidence, so far as it goes, of a direct association in the cause of the two phenomena. In his case, as in numerous others in which reflex clonus of the foot has been seen to occur, the existence of lateral sclerosis cannot be doubted. How far the occurrence of these movements is pathognomonic of particular situations of sclerosis in the spinal cord, and the diagnostic value of the symptom in the case of the patient C—, in whose person I have shown them, must be left for future consideration.

## PARACENTESIS ABDOMINIS BY GRADUAL DRAINAGE WITH A SINGLE FINE CANNULA.

BY REGINALD SOUTHEY, M.D. OXON., F.R.C.P.,  
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THE unusual relief of the distressing symptom of anasarca which I found follow the employment of fine drainage-cannulas encouraged me to employ nearly the same apparatus in the treatment of ascites; and now that my experience has extended over a fair number of cases, enough to satisfy me that this mode of proceeding is attended by no extra risks, I venture to lay it as briefly as I can before the profession.

*Apparatus.*—The trocar and bulb-headed cannula required for the purpose of gradually drawing off ascitic fluid, by the help of a capillary tube, differs very little from that employed by me for anasarcaous limbs. Both instruments are equally fine. The calibre is the No. 1 exploring trocar of the surgeon. One long needle-trocar, measuring an inch and three-quarters in length from hilt to point, has appeared long enough for all the cases hitherto tapped by me. Three or four cannulas of different lengths, adapted to the thickness from fat and oedema

<sup>2</sup> Archives de Physiologie, vol. i., p. 153.

<sup>3</sup> Leçons sur les Maladies du Système Nerveux. Paris, 1873, 3me fasc., p. 218.

<sup>4</sup> "Ueber Sehnen reflex bei Gesunden und bei Rückenmarks-kranken." Archiv für Psychiatrie. Berlin, 1875.

of different abdominal walls, are required. The cannulas may be perforated with as many as six or eight side holes—the more the better, so that their strength is not interfered with. The mouth end of each cannula should be armed with a small silver plate or shield, to obviate any risk of the cannula head sinking beneath the surface of the skin when this is highly œdematous; and, simple as it may seem to contrive an armature which may thus secure and help to maintain the cannula in position, I may say that I have not yet quite mastered the matter. As to the length of the shield or cross-beam, one inch appears ample—i.e., half an inch each side of the cannula. The shield may be round or square with rounded edges, or, as I have had mine made, as elongated plates, one inch long by a quarter of an inch broad, and about a thirty-second of an inch thick. Whether the cannula was best fixed immovably to the shield or otherwise, was the next point to decide. It was found that the immovably fixed shield, held fast by two strips of plaster, by dint of the movements of the abdominal muscles in respiration either worked away from its plaster moorings or tended to work out the cannula end from the peritoneal cavity. Messrs. Ferguson therefore contrived a shield for me which held, but allowed the cannula a limited play in every direction, and in practice this has worked admirably. One instrument I had made for those particular cases in which, although the ascites has been considerable, and its relief urgent, the presence either of cancerous tumours in the abdominal cavity or an enlarged liver has rendered a hard and pointed body, like the cannula end, abutting on the peritoneal aspect of the abdominal parietes, undesirable; for as the fluid drains away the abdomen collapses and the parietes sink, and large, soft-surfaced masses, moved up and down by the descent of the diaphragm, might be torn and fretted against the cannula, and made to bleed. To meet this emergency a cannula which merely traversed a shield-plate, and was not fixed at all, appeared best adapted. If anything pushed it from within, out it could come.

*Mode of operation.*—Trivial as this is, it appears to me from experience that there is a right and a wrong way of introducing the cannula. Instead of driving the trocar in quite perpendicularly, it is best to slope the point downwards somewhat towards the pubes, and to avoid making the cannula point upwards towards the sternum. The wound made is so slight that one can afford to make it almost anywhere, but from prejudice I should select the raphe or mesial line below the umbilicus, and about midway between this and the pubes. Before operating, I always insist upon my house-physician ascertaining that the bladder is empty.

I append one case of ascites from cirrhosis thus treated, but for the last year I have had every case of ascites—hepatic, carcinomatous, cardiac, renal—which has fallen under my care at St. Bartholomew's, and required tapping, tapped in this way; and the results have proved sufficiently satisfactory for me to recommend it highly. I have had no instance of peritonitis thus provoked. The paracentesis, instead of being a formidable operation, is nothing more than the prick of a needle. The ascitic fluid is quite sufficiently evacuated; it is also removed gradually, the near average rate of its removal being from ten to twenty ounces per hour. The pressure upon the diaphragm, the intestines, the intra-abdominal vessels, and the walls of the abdomen, is slowly but steadily relieved. There is no syncope provoked and no necessity for swathing the patient with bandages, a circumstance in the old method of performing paracentesis by large trocars which in hot weather added greatly to the patient's distress. Both by doctors and patients this mode of performing paracentesis will, I think, be hailed as an advance in clinical medicine.

William H—, aged fifty-eight, shoemaker, was admitted into Luke ward on March 12th, 1878, for extensive ascites and anasarca of his legs. The abdomen was very tense; dyspnoea considerable; some cyanosis. Urine scanty, high coloured, of high specific gravity, containing no albumen. Heart's apex beat two inches outside left nipple line; systolic murmur loudest at apex and over ventricle. Pulse very irregular. Breathing shallow; some œdema of both bases, posteriorly with bronchial râles. Limit of liver and spleen not to be ascertained by reason of the ascites. Up to ten years ago he had had good health; then had first attack of rheumatic gout. Was admitted into the hospital in June, 1876, for dropsy of legs and abdomen, and was discharged well, and again for a recurrence of dropsy about Christmas, 1876.

The man's physiognomy, his habits of life, and the manner in which his present dropsy had commenced, the abdomen swelling before the legs, led me, notwithstanding the cardiac murmur, manifest dilatation of both ventricles, and irregular heart's action, to attribute his dropsy principally to cirrhosis of the liver and an obstructed portal circulation.

Paracentesis abdominis with my fine trocar and fixed shield was performed at 6 P.M. on March 13th. In twenty-one hours, 11,400 cc. of clear, straw-coloured serum had been evacuated by the capillary tube. The specific gravity of the ascitic fluid was 1020; reaction alkaline. The amount of fibrin as well as of albumen in it very considerable; the former manifesting its presence by spontaneous formation of a slight coagulum in the fluid. The tube was removed during the night of the 14th–15th, the fluid having ceased to flow, and the abdomen being quite flaccid.

March 18th.—Condition singularly improved: appetite good; functions normal; urine flow abundant, clear, amber-coloured, alkaline, sp. gr. 1024, no albumen; breathing quite tranquil; sleeps well; heart's apex still beats two inches outside left nipple perpendicular between fourth and fifth ribs; action still irregular; first sound loud and ringing, but attended by no murmur; liver manifestly contracted, small, and cirrhotic.

Towards end of April the abdomen had again filled considerably, and the legs began to be œdematous once more, but his appetite and general health were otherwise fairly good.

May 5th.—The distension of abdomen and interference with the descent of the diaphragm again threatened death by dyspnoea. Breathing shallow and hurried. The auscultatory signs rendered presence of some fluid in right pleura probable, as also œdema of lower part of left lung. Paracentesis again performed as before. The tube remained in thirty-three hours, during which time twenty-one pints of clear fluid were drawn off; it ceased flowing on the morning of the 7th of May.

On May 9th he was so perfectly comfortable and feeling so well that there was no object in keeping him longer in bed. On May 11th he was discharged at his own request.

*Remarks.*—This patient's case was doubtless a highly favourable one for relief by tapping. The best prognostic feature in any case of hepatic dropsy is a stomach that still maintains digestive powers. In treatment, however, this mode of performing paracentesis leaves nothing to be desired; the *tuto, cito, et jucunde* are sufficiently fulfilled by it.

Harley-street, W.

## CONTRIBUTIONS TO PLASTIC SURGERY.

BY SURGEON-MAJOR J. M. FLEMING, M.D.,  
BENGAL MEDICAL DEPARTMENT.

THE following cases, in which endeavours were made at the restoration of lost or damaged parts, are, perhaps, sufficiently interesting to be placed on record:—

CASE 1. *Restoration of Nose.*—Jamuna, Hindu, admitted into the Khandwa Dispensary (Central Provinces), in August, 1869, on account of loss of the nose three or four years previously. The whole of the nose, beyond the extremity of the nasal bones, wanting, with the exception of a small part of the left ala.

August 17th.—Placed under chloroform, and a flap of skin dissected from the forehead, brought down by a twist towards the right side, and attached to the stump, previously pared, by a twisted suture at each angle, and strips of adhesive plaster along the sides. Nostrils stuffed with lint moistened with carbolic oil. The lower part of the wound on the forehead brought together with a twisted suture, and the whole covered with carbolic dressing, a flap of dry lint being allowed to hang down over the nose.

20th.—Dressings changed. The edges of the new nose, where visible, look healthy.

22nd.—Found, unfortunately, this morning that some maggots had got under the flap. These were removed as far as possible, and the parts where they had lodged freely touched with a strong solution of carbolic acid. Needle on forehead and the one at left angle of nose removed, and strapping changed. Good adhesion at septum, and at both angles of nose.