the pelvis or to some important organ, as the liver or stomach. When the tumour is adherent only to the anterior wall of the abdomen, the complication does not seem to be of great moment. I have, in one case, separated very extensive adhesions in the pelvis successfully, but I have also seen an iliac vessel torn across, fatal hæmorrhage being the result. I have removed a very large tumour which was adherent almost universally, but the patient died in forty hours of shock. I had diagnosed extensive adhesion before the operation.

Hæmorrhage from adhesions is sometimes troublesome, and may require considerable patience to overcome it. If a bleeding point be within sight, and it be limited to one mouth, it had better be secured by a ligature cut short, if torsion fail to stop it. If it consist of oozing from a surface, either a touch with the solid perchloride of iron or the hot cautery is better.

If there be no adhesions and no large secondary cysts, ovariectomy thus far is a very simple operation, which seldom takes above five or six minutes to complete, and this simplicity has been a great snare to many; for there is no operation usually performed which requires the surgeon to be more alive to possibilities, and to be prepared for them, than ovariectomy. The complications and unexpected difficulties are endless, and sometimes extremely trying to the presence of mind and ingenuity of the operator. Thus a second dermoid cyst may be found packed down in the pelvis, as has twice happened to me, and to get it out may be a matter of no little trouble. For such a condition, the aspirator will be found invaluable, and it ought always to be within reach. The cyst-walls may be found so thin, that any kind of forceps will tear them, and the contents so glairy, that they will not run through a trocar, as I have more than once experienced; or the secondary cysts may be found so numerous and so small, that there is no alternative but to bring them one by one to the surface and slit them open, brushing the escaped contents immediately off with a sponge. This has occurred in my practice several times, and I have always adopted this plan rather than carry the incision above the umbilicus.

As the tumour is being withdrawn, an assistant should be ready, on the left side of the patient, to insert the forefinger of his right hand into the wound, and, by grasping the integuments on the one side with his thumb and on the other with the remaining fingers, to close the wound, and thus prevent the escape of the intestines. If he be sufficiently alert, the bowels need never be seen in a well conducted ovariectomy. Having got the tumour fairly out, the surgeon's first duty is to examine the pedicle and decide how it is to be treated. I have tried four methods of treating the pedicle, namely, by the long and short ligatures, division by the *écraseur*, and inclusion in the clamp, and I have arrived at the firm conviction that the clamp is the best in every way when it can be applied. The form I prefer, after a trial of all the kinds I have seen, is the calliper-clamp of Mr. Wells. I have divided the pedicle ten times with the *écraseur*, and only one of these patients has died, the case being that of the very adherent tumour I have referred to, and which would have died no matter how the pedicle had been treated. I have a distrust of the *écraseur*, however, because, in two of my cases, a pelvic hæmatocele formed coincidently with menstruation a few weeks after the operation. In neither of them was there any danger to life produced by the hæmatocele; but, considering how frequently an irregular menstruation occurs a day or two after ovariectomy, I have given up the use of the *écraseur* in the treatment of the pedicle, dreading an unfortunate result. Moreover, Mr. Wells has shown that a divided pedicle dropped in back is very apt to contract adhesions to the intestines, and give rise to serious trouble. One case I treated by carbolised ligatures, and she died on the fifth day from pelvic peritonitis and suppuration. In one case, there was no pedicle, and I removed the tumour as well as I could, partly by the *écraseur* and partly by scissors, tying the bleeding points as I found them. This patient died on the fourth day. Any similar case I may meet with in future, I shall treat by Dr. Miner's plan of enucleation. In two cases, I tied the pedicle with silver wire and dropped it back. Both these patients made excellent recoveries, and both carry their wire-rings to this day without inconvenience; and I think I shall adopt this plan when I cannot use a clamp. In one case, I used the long ligature, and she died on the fourth day. She will be the last in which I shall so treat the pedicle. I have had no experience of the use of the cautery.

After the pedicle has been satisfactorily dealt with, the state of the peritoneal cavity ought to be the subject of the surgeon's attention; for it is certain that the careful removal of any clots or cystic fluid that may be there, is a necessary part of the success of any operation. Large flat sponges are best for this, and they should be stuffed well down into the pelvis and round into the lumbar regions, and left there for a few minutes. The operator should always know how many sponges are in use, and they should be counted before the wound is closed. Previously to this last step of the operation, it must be carefully ascertained that

the other ovary is healthy. If it be enlarged by cysts, it had better be removed, or, if it contain only one or two small cysts, they may be opened and their contents pressed out. Any tumour of the uterus had better be left alone, unless it be markedly pedunculated. If the uterus be found enlarged by pregnancy, it must be left alone; but, if unfortunately punctured in mistake for a cyst, as has happened several times, the safest treatment is to lay it open and empty it, as has been done successfully by Mr. Spencer Wells. The closure of the wound I usually effect by silver sutures passed by a handled needle; and, when a clamp has been applied to the pedicle, I pass the first stitch as a double wire immediately above the clamp, and fasten it at once. I always act on Mr. Wells's suggestion, and leave a sponge in the abdomen, just within the wound, until the other stitches are passed, and withdraw it before they are fastened. Care must be taken to include the peritoneum on both sides in the stitches, and to enclose no intestine or omentum in them, nor in the clamp. In fastening the deep sutures, the lips of the skin-wound must be carefully adjusted, and, if necessary, superficial sutures should be inserted. For the closed wound, a variety of dressings may be used. In my own practice, when I have treated the pedicle by returning it within the peritoneum, I have always used Lister's lac plaster, and I have found it a very convenient form of dressing. I may say that I did not take any other antiseptic precautions, nor have I ever seen a case where they seem to have done any good. In cases where the operation has been done under a carbolic spray, the only difference observable was in the comfort of the operating surgeon, and this difference was no advantage. When I have used the clamp, I have always adopted Mr. Wells's dressing, which consists of little squares of dry lint tucked in under the clamp and laid over the wound. It is extremely neat and convenient, and, if covered by little bags containing Skinner's disinfecting powder or a pad of oakum, it is, perhaps, the best of all. Instead of Mr. Wells's strapping, I employ a linen binder fastened by safety-pins. The wound rarely requires to be dressed more than once in twenty-four hours, and, for cleansing it, some old linen or lint should be used without moisture. The wound generally heals by first intention, and the stitches may all be removed on the seventh or eighth day, except the one nearest the pedicle, which had better be kept in somewhat longer. The clamp generally comes away between the eighth and twelfth days, but its separation ought never to be hastened. In one or two cases where I have helped it a little, I have had reason to regret my haste by seeing the stump slowly sink downwards, keeping me in suspense for a few days as to whether or not the peritoneum would again be opened. When the clamp has come away, the dry lint dressings should be continued until the wound has healed, and the patient should be warned that the wound may open up slightly and discharge some menstrual fluid for a few months after the operation. In a case where I removed both ovaries and included both pedicles in one clamp, this after-discharge did not occur.

[To be continued.]

EXTRACTION OF A PIECE OF STEEL FROM THE VITREOUS HUMOUR BY THE MAGNET: RECOVERY OF ALMOST PERFECT VISION.

By WILLIAM A. McKEOWN, M.D.,
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EDWARD MILLS, aged 15, apprentice in an iron ship-building yard, consulted me at the hospital on the 21st of November last. He stated that on the previous day, whilst he and another lad were striking a rivet, the two hammers struck each other violently, and a piece of metal flew from the hammer and wounded his right eye. A wound appeared in the cornea, beginning in its centre, and passing out towards the outer margin. It seemed to be superficial at the centre, and to become deeper and penetrate as it passed outwards. The sphincter of the pupil was cut at the outer margin, and the iris at that part retracted towards its peripheral attachment. The boy could count fingers easily; but no accurate determination of the degree of vision was made, in consequence of the extreme tenderness of the eye. The ophthalmoscope showed no trace of opacity of the lens; and the fundus of the eye could be seen distinctly, except a small part at the temporal side. Deep in the vitreous body at that part were observed, by direct illumination, opacities situate near to the retina, and showing a marked tendency to a dependent position, as if somebody were pulling them down. Sometimes, at the lower part of one of the opacities, a silvery streak appeared, as if from the sharp margin of a bright metallic body. On throwing the light obliquely from the mirror held to the left of the middle line of

the patient, and placing my eye in such a position as to receive the rays reflected from the opacities, they appeared red, with a very lustrous aspect, as if some bright reflecting substance were imbedded; whilst the margin before referred to could also be recognised. To all present at the examination, the evidence of the presence of a foreign body, masked by a slight effusion of blood in the vitreous, was convincing. The metal had taken an extraordinary course, as, after penetrating near the centre of the cornea, wounding the iris, and passing behind it, it turned round the margin of the lens, apparently without wounding it, and entered the vitreous body.

Next day, the patient reported that he had suffered from intense pain in the eye and brow during the night. The media of the eye had become so cloudy, that the disc was obscurely seen, and the foreign body could no longer be detected. It was plain that the eye was threatened with a rapidly destructive inflammation, and that immediate interference was necessary. By keeping the patient lying on his face for some time, the body again came into view.

In a case such as this, my course of action, according to the practice of the profession and the advice in standard works, should have been—1. To make a wound in the sclerotic near the site of the foreign body, and hope that it would be expelled with a quantity of vitreous humour, and, if not, to endeavour to seize it with forceps; and, if these efforts should be fruitless, to rest satisfied if the injuries inflicted should excite suppurative inflammation and total loss of the organ; 2. To allow the body to remain, and trust to the chance of its being encysted, but be prepared to enucleate the eye, should inflammation set in of such a character as to destroy the eye and endanger the other.

The prospect from either of these methods was not inviting. I know of only one case recorded in which metal was extracted from the vitreous body by forceps with preservation of good vision; and the cases in which metal becomes encysted, and never gives further trouble, form but a small percentage. The universal experience of the profession, showing the great peril of total loss of vision from foreign bodies in the vitreous body, made me determine to extract it; but I had the gravest doubt of its accomplishment by forceps. I had given the matter for some time some thought, and had come to the conclusion to try, in the first case in which the presence of a piece of steel or iron was undoubted, the power of magnetic attraction. I had obtained a bar-magnet about eight inches long, one inch broad, and one line thick, and tapering at both extremities to a blunt point.

The patient having been etherised, I made an incision about two and a half lines in length in the sclerotic at the outer part, about two and a half lines from, and parallel to, the corneal margin. A pair of iridectomy-forceps were introduced into the vitreous humour, but they failed to touch the body. I then tried the magnet. I introduced the pointed end into the vitreous humour as far as its shape would admit, and directed it backwards towards the posterior pole of the eye. The foreign body was felt to become attached; but it was only on the third trial that I had the satisfaction of withdrawing the metal on the end of the magnet. It was oval in shape, about a line long, and half a line broad, sharp on the edge, particularly on one side. The thickest part was about a quarter of a line. It weighed half a grain.

Although the magnet seemed a clumsy instrument to thrust into the eye, yet it answered the purpose admirably—it fulfilled the important indication of perfectly preventing loss of vitreous humour during the operation. The foreign body was twice removed from the magnet by the grasp of the margins of the sclerotic wound. For this reason, it would be an advantage to have on each side of the end of the magnet a little slide, which could be pushed down about a line past the extremity of the magnet, so as effectually to shield the foreign body from contact with the edges of the wound at the time of withdrawing the instrument from the eye.

The vitreous body, whilst it retains its structure, offers great resistance to the passage of a foreign substance through it by magnetic attraction. Suppose a piece of metal to be under the influence of the magnet, and that the vitreous body between the substance and the magnet be sound, the most powerful magnet will not draw the foreign body through the vitreous humour; but the vitreous humour, if there be space to move in, will move in mass with the body, and attempt at extraction will fail. Hence it is necessary that the vitreous humour intervening should be broken up, so as to make a passage whereby the metal may pass. The knife by which the incision is made should be used for this purpose, or even the end of the magnet itself. So, suppose the metal should have entered by the sclerotic, then the incision should, as a general rule, be made at that part, as the magnet will tend to attract the body along the track it has already traversed. In such a case, also, a powerful magnet may be used in another way—viz, by applying one pole outside the eye, so as to draw the metal to the wound; and, the body being thus held by magnetic influence, it may be seized with forceps and extracted.

I am not aware of magnetic attraction ever having been used for extraction of foreign bodies from the vitreous body, and I trust that the extremely satisfactory results in this case may lead to its recognition and adoption. Before applying it, the surgeon should know (1) that the foreign body is steel or iron, or some other metal attracted by the magnet; (2) the region in which the body is; (3) that the foreign body is not imbedded in one of the tunics of the eye, or enveloped in fixed organised inflammatory deposits. To avoid this complication, the operation of extraction should be attempted as soon after the accident as possible.

The boy remained in hospital three days, and was subsequently treated as an extern patient. The treatment consisted in the instillation of a solution of atropia and the application of the compress bandage. No pain was felt after the operation; the media of the eye cleared rapidly; and the vision improved from day to day. In a short time, the wound in the cornea was scarcely perceptible; the iris, where it was cut and bruised, seemed to atrophy, the rest of it remaining healthy; the lens retained its transparency; the vitreous body showed some slight filmy opacity where the foreign body had been lodged. The field of vision was perfect, save the small part to the nasal side corresponding to the part of the retina in the neighbourhood of the wound.

On the 13th of December last, I brought the patient before the members of the Ulster Medical Society, when we found the state of matters above described. I tested his vision, and found that he could read No. 2 of Snellen's types at one foot—a degree of acuity extremely satisfactory. In fact, the boy notices very little difference between his eyes. He resumed his work soon afterwards, and has continued well ever since.

LEAVES FROM MY DIARY DURING THE ASHANTEE WAR.

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V.—SIERRA LEONE.

HERODOTUS mentions voyages in the direction of Sierra Leone undertaken by the great Carthaginian explorer Hanno, who, it is said, returned frightened from further advance by mountains of fire, and noises too terrible to listen to—vagaries of an excited imagination. The name was given by its first explorer Pedro de Cintra, who visited here in 1467. A century afterwards, a French fleet, anchored in its roadstead, lost its admiral and many sailors from malignant fever; a little more than two hundred years more saw its transfer to England by its original possessors the Timmanees, who still style it "Romarong". Since its cession in 1787, it has—in spite of attacks from the natives, bombardments by the French, and the ravages of epidemics—been much improved, and is now the chief seat of government in Western Africa.

The site is quasi-insular; west-south-west lie the Banana Islands. The Bunce River, to the north, meets Campbell's Creek from the south, a small *portage* intervening, thus rendering the colony almost an island. These several boundaries enclose an area of 250 square miles, containing a population of some 45,000, chiefly congregated together in Freetown, the capital; the residue are scattered in the small river and mountain hamlets of Kissy, Leicester, Gloucester, Regent, Waterloo, etc. Freetown has had the advantage of a modern plan for its formation: it slopes up gradually from the river front to Fort Thornton or Government House, immediately behind which is the military store, and beyond, the garrison hospital at the base of Tower Hill, an isolated conical "pap" 375 feet above sea-level. Upon its summit, surrounded by a wall of ironstone, are the barracks, built in 1826, and consisting of three principal bungalows, capable of containing the head-quarters and five companies of a West India Regiment. In former days, the men occupied shanties at the foot of the hill, in the vicinity of the present hospital. These barracks, the best constructed in Western Africa, are admirably situated, their isolation and elevated situation admitting of a free perflation of air and facilitating drainage. Behind, are the mountains; intervening, is a gorge; a road encircles the base of the hill. Freetown boasts of a cathedral, colonial hospital, lunatic asylum, liberated African yard, custom-house, and market. There are several well-built houses, chiefly situated along Water Street, besides numerous native hovels. The former have basements of ironstone and wooden superstructures, usually enclosing two or four rooms, surrounded by a piazza or weather boarding; the latter are constructed of mud and wattle, thatched with bamboo or long grass, or covered with shingles. Each of these houses or hovels is surrounded by a small compound enclosed by hedges of the cactus, croton, or castor-oil plants. Regularly laid out in streets running at right angles to each other, the gradual