

former length. The division of the parts is effected by the continuous pressure of the cord, which compresses the vessels and lymphatics until the vessels are plugged, and the access of nutritive material is completely interrupted. The substance of India-rubber has the peculiarity of not producing suppuration; and hence, while the compressed parts disappear, a granulating furrow is left, and after the part has fallen off, a healthy luxuriant granulating surface remains. As the tied parts fall off, the ligature springs away from the granulations. The ligature then forms a closed ring, aperture of which is so narrow that a probe or needle can scarcely enter it. The process of ligature or division lasts from three to fifteen days, according to the thickness of the pedicle and the density of the tissues; in a case of cancer of the breast, the duration of treatment was fifteen days. I have never detected febrile symptoms, even when the surface was extensive and the pedicle broad.

The mode of proceeding I have varied according to the peculiarities of the task to be performed.

1. In *navus*, after transfixing it with needles as for ordinary ligature, I have the tumour fixed by an assistant during the tying. A single circular ligature is sufficient. In the two cases in which I used this treatment, the *navus* fell off in eight days.

2. In *fistula ani* or sinuses about the rectum, the elastic ligature has especial advantages where the inner opening of the fistula lies high up or the sinus extends far. In the case of sinus, an inner opening (into the rectum) is first made by means of a trocar. The trocar being withdrawn, the elastic thread is introduced through the rectum. This proceeding is rendered more easy by first introducing a metallic thread into the rectum through the canula, seizing it with the finger or forceps, drawing it through the anus, and removing the canula. The outer end of the wire is now fastened to the small elastic tubing by means of a waxed thread. In this way the elastic cord is very easily drawn through, if the index finger of the left hand can be passed up the rectum as far as the opening. Both ends of the ligature are drawn upon, and tied rather tight. The bridge of intestine with the sphincter is generally cut through in three or four days, and the patient finds the ligature, contracted into a ring, lying in his bed. In complete *fistula ani*, the metal wire is carried into the intestine along the groove of a director, and the use of the trocar is unnecessary.

3. In *prolapsus ani*, the protruding fold is seized with hooks or polypus-forceps, as for the application of the ordinary ligature, and drawn down a little. In order that the fold may not escape from the forceps while the ligature is being applied, an assistant must press against the fold after it is seized, a second must stretch the cord, and a third must fix between his fingers a small portion of the cord corresponding to the fold, so that it remains only for the operator to tie the ligature. The ligature falls off in three or four days.

4. In sinuses I have used the elastic ligature many times; and will briefly relate the following

case. Herr Sch., residing in Olconstrasse, aged twenty-two, very anæmic, had been suffering twelve weeks from inflammation of the left inguinal glands, following typhus. On Dec. 5, 1872, in consultation with his ordinary doctor, Dr. Humburger, I opened an abscess; and on December 7, as the glands were greatly swollen and suppuration had extended down to their lower border, I repeated the operation. There remained a sinus passing below the glands for about two inches. On December 25 I introduced through the sinus a ligature which included the superjacent skin and all the glands. On the second day, the portion of the bridge of skin that was left was only two lines long, the swelling of the glands was reduced, and healthy granulations were present. The fever disappeared; the ligature fell off on the sixth day. The patient completely recovered.

In a second operation in which I applied the elastic ligature, the bridge of skin was four inches long. The result was equally favourable.

5. In tumours, the elastic ligature has its application when they are pedunculated, or when they can be isolated, or when it is not possible or necessary to save the skin. It is thus inapplicable in diffuse infiltration. I have had only one opportunity of applying the elastic ligature to a tumour. The patient was Frau H., aged seventy-four, and at her age neither I nor another surgeon would have undertaken the risk of a bloody operation. But, having already ascertained that the elastic ligature did not produce any fever, and as the old lady earnestly desired that the tumour—a fibrous cancer of the right breast—should be removed, I concluded to make this first attempt. The cancer had at its base a vertical diameter of about four inches, and a transverse diameter of five inches, and was movable. I passed a Fleurand's trocar through, beneath the tumour, in the direction of the vertical diameter; and, having withdrawn the trocar I introduced through the canula two waxed threads, and by means of them drew through two pieces of small India-rubber tubing; the canula was then withdrawn, leaving the tubes. I now, while an assistant drew forward the tumour, embraced each half in the corresponding portion of tube, and tied the ends of the tubing firmly in a double knot. This was done in the outpatient department on January 9, 1873. On the second day I had the patient taken into ward no. 81, as she was rather anxious on account of some pain. The furrow procured by the ligature became deeper daily before our eyes, leaving a granulating surface while the tumour correspondingly collapsed, sloughed, and fell off on the tenth day. During the whole time the patient had no fever, only an increase of thirst on the eighth day. The old lady was right well pleased with the result.

6. I have applied the elastic ligature to arteries in the following cases.

a. To the popliteal artery, on the occasion of amputating the left thigh after Gritti's method. The ligature was thrown off on the sixteenth day.

b. To the anterior tibial artery in two cases of amputation of the left leg, the ligature falling off

on the seventh day: and once in a Pirogoff's amputation.

c. To small branches of the anterior and posterior tibial and peroneal arteries. I have thus ascertained, that by means of the elastic ligature the flow of blood from the divided arteries may be completely arrested and their final closure perfectly attained; and further, that this ligature does not provoke suppuration. But with regard to the question whether it may be retained and encapsuled without mischief, made no experiments. In the cases in which I applied it, the wounds were not closed, except in the Pirogoff's operation, where the ligature was soon thrown off.

The mode of applying the ligature to arteries requires some improvement. I have so far modified it, that the elastic thread is first applied over the end of the catch-forceps, and when it is tied, is pushed from the instrument by an assistant, with the nail of his forefinger. The ligature then springs over the artery that is held; but sometimes it misses at first. It is probable that this ligature does not require to be tied very tight, but only just so much as is sufficient to compress the lumen of the artery, so as to allow the formation of a plug, and its organisation and definite union with the walls of the vessel, so as to completely close the artery. That the ligature remained sixteen days in the case of Gritti's operation, must be ascribed to the fact that I connected two ligatures one with the other, so that they held on like the links of a chain. It was interesting to see the two mouths of the ends of the tube projecting from the granulations, without any trace of pus around them.

MEDICAL ASSOCIATION OF LEEDS AND GRENVILLE.

In answer to a special invitation to a number of medical men of Leeds and Grenville, a meeting took place in the Hall of the Market House, Brockville, on the 20th inst., for the purpose of forming a Medical Association in these United Counties, for the object of mutual interchange of thought on subjects of Professional interest. Dr. Morden, of Brockville, was unanimously voted to the chair, and Dr. Elkington to act as Secretary.

The Secretary having read the "Amendment to the Medical Bill," Dr. Addison was called upon to read a paper, which he had prepared on the subject of the Bill, which occasioned some considerable discussion pro and con, the chairman more especially advocating the "restrictive Clauses," and Dr. Lauder, of Frankville, opposing them in a powerful appeal. The desirability of such an Association having been proposed as involving interests highly important to the profession in these Counties and to the public, Dr. Morden was unanimously chosen President, Dr. Addison, first Vice President; Dr. Wallace, second Vice President; Dr. Elkington, Secretary, and Dr. J. E. Brouse, Treasurer.

Dr. Addison then offered a resolution disapproving of the clause of the proposed Bill the object of which is to impose an annual tax upon the medical men of the Province, which being opposed was, for the time, withdrawn, and is to be taken up at the first regular meeting of the Association which is to be held on January the 9th 1874, at one o'clock, in the Victoria Hall, Brockville.