should, in the first instance, be confined to ligature of the carotid, ligature of the third part of the subclavian being resorted to if advisable at a future stage in the progress of the case.

The case reported further illustrates the value of the antiseptic catgut ligature and other antiseptic precautions, the combined use of which has, in my opinion, removed all the most serious risks in connection with the ligature of arteries.

ON LIGATURE OF THE COMMON FEMORAL ARTERY; AND ESPECIALLY ON LIGATURE BY AN ANTISEPTIC MATERIAL.*

By OLIVER PEMBERTON, F.R.C.S.Ed.,

Surgeon to the General Hospital, and Professor of Surgery in Queen's College, Birmingham.

THREE years since, when I had the honour to deliver the Address in Surgery at our Birmingham meeting, I mentioned a case of aneurism in Scarpa's space, in which, in preference to applying a ligature to the external iliac, I tied what I presumed to be the common femoral an inch below Poupart's ligament. I did this with an ordinary hempen ligature, and left the wound completely open.

So far as the treatment of the aneurism was concerned, the case did perfectly well; but, when I came to dissect the arteries involved—death having taken place from causes wholly removed from the aneurism—I found the circumflex ilii, epigastric, and profunda femoris given off together; that is, at opposite points of a line drawn from the main trunk a little above Poupart's ligament; the point of the ligature being five-eighths of an inch below these vessels, and the tube of the artery intervening being firmly plugged.

Now, although it is obvious that I really tied here the superficial, not the common femoral, owing to the abnormal origin of the profunda, yet the case affords an overwhelming proof of the fact that an abiding coagulum can form in the immediate vicinity of almost any number of branches on the proximal side of a ligature. If this be so, the chief ground for discarding the operation of ligature of the common femoral disappears.

I wish, however, to show that it is the duty of the surgeon to choose this proceeding in preference to tying the external iliac: a duty that becomes imperative when it is based on the knowledge that he submits his patient to less risk of danger to life from the mere operation; and, what is of equal importance, that he has yet a favourable artery to tie in case of failure. I am fully aware that no mean surgical authority—Mr. Erichsen—lays down the rule of surgery, "That in all cases of aneurism above the middle of the thigh, and in which sufficient space does not intervene between the giving off of the deep femoral and the upper part of the sac for the application of a ligature to the superficial femoral, the external iliac should be tied, unless compression can be successfully employed". From this I dissent, and, as I have already said, because the very reason Mr. Erichsen assigns for his judgment—namely, that the liability to secondary hæmorrhage is almost a necessary consequence of the operation, the shortness of the trunk rendering it necessary to tie the artery in close proximity to such large collateral branches that the arterial coagulum will not readily form—does not, in my opinion, constitute a sufficiently valid reason.

And now I will ask to place on one side for a moment the case I have submitted, and inquire whether this source of danger is not diminished, or even entirely removed, by the use of a ligature composed of antiseptic materials.

CASE.—A strongly built Indian soldier, aged 33, non-syphilitic, came under my notice at the General Hospital, Birmingham, in May 1874, with a rapidly increasing aneurism of the left superficial femoral artery. Of very slow growth in its early history, its character was now changed. Reaching to within three to four inches distance from Poupart's ligament, it compassed a space of six inches in extent, was largely raised above the surrounding parts, and was accompanied by strong visible pulsation, by œdema, and severe pain.

After a few days of carefully applied pressure at the arch had proved of no avail, on May 26th I tied the main artery and what should be the common femoral, an inch below Poupart's ligament. I used an ordinary antiseptically prepared catgut ligature, tying the vessel by a single loop, and finishing by a double one. The ends were cut off short, and the wound closed. The contents of the aneurismal sac remained fluid for a long time; and it was not until nearly three months had elapsed that everything was absorbed and the limb restored.

Now, neither at the operation nor subsequently did I follow out the antiseptic method of treating the wound; that healed in the ordinary way by supuration and gradual repair. I simply desired to permanently close the artery at a given point without cutting it through; and this, I submit, was effectually and safely accomplished, even in the midst of supuration.

I am not aware of any previous instance in which an animal ligature has been applied to the common femoral, with the exception of Professor Lister's case referred to by him in his Address to the British Medical Association at Plymouth (August 1871), where, in the face of a diffused popliteal aneurism, he tied what he expected to be the common femoral with a catgut ligature. The vessel, at any rate, as he informs me, was ligatured about the most frequent situation of the origin of the profunda—making the case all the more striking, as the only result he would expect from the application of a silk ligature in such a situation would be secondary hæmorrhage.

The principle involved in tying arteries in their continuity by means of animal ligatures may be still on its trial; but I will be bold enough to assert "that the fate or behaviour of a given antiseptic catgut ligature, applied to the continuity of an artery", will yet be foretold with confidence as to the favourable result. And in this I appear to be more sanguine than Mr. Maunder states himself to be in his recent Lettsomian Lectures on the *Surgery of the Arteries*.

It is, I think, to be regretted, that I was unable to place my recent experience in Mr. Holmes's hands before he summed up his views on ligature of the common femoral in his lectures at the Royal College of Surgeons last year, as I intended doing, thereby strengthening the conclusion at which he arrived: that there was no just cause to banish this operation from surgical practice. The cases of Ramsden, of Mott, of Porter, Macnamara, Colles, and myself, led him to this view with the use of the hempen ligature. Surely the consideration of Professor Lister's case, and the one I now for the first time lay before the profession, should remove from his mind his remaining objection, based on the uncertainty of the place of origin of the profunda: a circumstance, I venture to think, of no real importance, when the canal of the artery is not cut through.

TWO CASES OF ANEURISM, ONE OF THE CAROTID AND ONE OF THE FEMORAL ARTERY, SUCCESSFULLY TREATED BY THE WIRE COMPRESS.*

By JOHN DIX, M.R.C.S., Hull.

THE wire compress, a substitute for the ligature, was first used by me in September 1860, just fifteen years ago, and was brought before the profession by a paper read at the Royal Medical and Chirurgical Society, January 13th, 1863. An abstract of this paper, with the discussion thereon, appeared in the weekly medical journals: it was published *in extenso* in the *Edinburgh Medical Journal* of September 1864, and reproduced in Braithwaite's *Retrospect*. The procedure was then looked upon as a novelty, and there was the usual dispute about priority of invention. The late Sir James Simpson afterwards settled this question for us by showing that the idea and the practice were more than three hundred years old—older, in fact, than the ligature—and that the only change from the method of the surgeons of the fifteenth century, was the substitution of wire for the thread of hemp or silk used by them. So true is the saying of Liston, that "young surgeons meet with many anomalous cases; they also rediscover many things".

It seems that this practice was superseded by the ligature, which was invented by Ambrose Paré about the year 1564; yet it was not altogether forgotten or laid aside, as mention of it crops up here and there in the surgical writings of various old authors, both English and foreign. Its revival in modern surgery is clearly due to the impetus given to surgical ingenuity by the introduction of acupressure by Sir James Simpson and his writings thereon, which so rudely shocked the faith of surgeons as to the perfection of the time honoured ligature.

But the long needles as at first used were by no means pretty, and many who thus made trial of acupressure, while recognising the soundness of its principle, could not shut their eyes to its defects, and so cast about for other methods of applying it. Hence we soon had before us various kinds of needles and varying modes of using them. Hence, also, arose this process, which I have called the "wire com-

* Read before the Surgical Section at the Annual Meeting of the British Medical Association in Edinburgh, August 1875.

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