be applied with great advantage ; but as slips of leather ſpread with ordinary glue, when applied to each ſide of the cicatrix, may, by means of ligatures properly connected with them, be made to anſwer the purpoſe more effectually, this mode of ſupporting the parts ought of courſe to be preferred.

Sect. II. *Of the Ligature of Arteries.*

When a ſurgeon is called immediately to a wound of any great artery of a limb, he ſhould clap the point of his finger upon the wounded artery, or make his aſſiſtant hold it ; cut the wound ſo far open as to ſee the artery fairly ; draw it out if it be cut acroſs, and have ſhrunk among the fleſh ; or tie it like the artery of the arm in aneuriſm by passing ligatures under it. When, however, the wound happens in ſuch situations that we cannot command the blood, it is better to cloſe the lips of the wound, and try to make them adhere by means of a very ſteady compreſs and bandage. Thus an aneuriſm will form ; the operation for the cure of which ſhall be afterwards deſcribed.

When accidents of this nature occur in any of the ex­tremities, and where preſſure can be made with eaſe on the ſuperior part of the artery, we are poſſessed of an inſtru­ment which never fails to put a ſtop to all further loſs of blood: we mean the tourniquet. SeePlateCCCCLXXXVII. fig 16.

The tourniquet has undergone many improvements ; but the one here repreſented is conſidered as the beſt. By means of it the blood in any limb is very eaſily and effectually commanded ; and as it graſps the whole member equally, all the collateral branches, as well as the principal arteries, are equally compreſſed by it. It has this material advan­tage too ever every other inſtrument of this kind, that, when properly applied, a single turn, or even half a turn, of the ſcrew, is ſufficient for producing either a flow of blood, or for putting a total ſtop to it. The manner of uſing it is as follows.

Let a cuſhion of three inches in length by one inch and half in diameter be prepared of a linen roller, tolerably firm, but not ſo hard as to render preſſure produced by it very painful. This being placed upon the courſe of the principal artery of the limb, is to be firmly ſecured in that ſituation by one or two turns of a circular roller, of the ſame breadth with the cuſhion itſelf.

The inſtrument, with the ſtrap connected with it, being now placed upon the limb, with the handle of the ſcrew on the oppoſite ſide of the member to the cuſhion upon the artery, the ſtrap is to be carried round the limb directly over the cuſhion, and to be firmly connected on the other side of the buckle. In thus connecting the ſtrap and buckle together, particular attention is neceſſary in doing it with great firmneſs; ſo as that the ſcrew may afterwards operate with as much advantage as poſſible in producing a ſufficient degree of preſſure. When proper attention is paid to this circumſtance, a ſingle turn of the ſcrew proves ſufficient for putting an entire ſtop to the circulation of blood in the limb: but when the ſtrap has not originally been made very tight, ſeveral turns of the ſcrew become neceſſary; an occurrence which may be always very eaſily prevented; and which, when not attended to, frequently proves very embarraſſing in the courſe of an operation.

Various methods have been invented for ſecuring arteries by means of ligatures. The practice till lately in ordinary uſe was, by means of a curved needle, to paſs a ligature of ſufficient ſtrength round the mouth of the bleeding veſſel, including a quarter of an inch all round oſ the ſurrounding parts, and afterwards to form a knot of a proper tightneſs upon the veſſel and other parts comprehended in the nooſe. But this method was found to give ſo much pain, and in ſome caſes to be attended with ſuch violent convulſions, not only in the part chiefly affected, but of the whole body, that the beſt practitioners have thought proper to reject it, and to tie up the blood-vessels by themſelves ; for it is now well known that even very ſmall arteries are poſſessed of much firmneſs ; and that even in the largeſt arteries a flight degree of compreſſion is ſufficient not only for reſtraining hemorrhagy, but for ſecuring the ligature on the very ſpot to which it is firſt applied.

In order to detect the arteries to be tied, the tourniquet, with which they are ſecured, muſt be ſlackened a little by a turn or two of the ſcrew ; and the moment the largeſt artery of the ſore is diſcovered, the ſurgeon fixes his eye upon it, and immediately reſtrains the blood again by means of the tourniquet. An aſſiſtant now forms a nooſe on the ligature to be made uſe of ; and this nooſe being put over the point of the tenaculum, Plate CCCCLXXXVII. fig. 17. the operator puſhes the ſharp point of the inſtrument through the ſides of the veſſel, and at the ſame time pulls ſo much of it out, over the ſurface of the ſurrounding parts, as he thinks is ſufficient to be included in the knot which the aſſiſtant is now to make upon the artery. In forming this ligature a ſingle knot moderately drawn, and over it another ſingle knot, is perfectly ſufficient.

When from the deepneſs of a wound, or from any other cauſe, ſome particular artery cannot be properly ſecured by the tenaculum ; in this caſe there is a neceſſity of employ­ing the crooked needle, and the following is the method of uſing it.

A needle of the ſhape repreſented Pl. CCCCLXXXVII. fig. 14. armed with a ligature of a size proportioned to it­ſelf and to the veſſel to be taken up, is to be introduced at the diſtance of a ſixth or eighth part of an inch from the artery, and puſhed to a depth ſufficient for retaining it, at the ſame time that it is carried fully one half round the blood- veſſel. It muſt now be drawn out ; and being again puſh­ed forward till it has completely encircled the mouth of the artery, it is then to be pulled out ; and a knot to be tied of a ſufficient firmneſs, as was already directed when the tenaculum is uſed.

Chap. XI. *Of Aneurisms.*

The term *Aneuriſm* was originally meant to ſignify a tumor formed by the dilatation of the coats of an artery ; but by modern practitioners it is made to apply not only to tumors of this kind, but to ſuch as are formed by blood effuſed from arteries into the contiguous parts. There are three ſpecies ; the true or encyſted, the falſe or diffuſed, and the varicoſe aneuriſm.

The *true* or en*cysted* aneuriſm, when ſituated near the ſurface of the body, produces a tumor at firſt ſmall and circumſcribed ; the ſkin retains its natural appearance ; when preſſed by the fingers, a pulſation is evidently diſtinguiſhed ; and with very little force the contents of the ſwelling may be made to diſappear ; but they immediately return upon removing the preſſure. By degrees the ſwell­ing increaſes, and becomes more prominent ; but ſtill the patient does not complain of pain : on preſſure the tumor continues of an equal ſoftneſs, and is compreſſible. After this the ſwelling becomes large, the ſkin turns paler than uſual, and in more advanced ſtages œdematous : the pulſe ſtill continues; but parts of the tumor become firm from the coagulation of the contained blood, and yield little to preſ­ſure ; at laſt the ſwelling increaſes in a gradual manner, and is attended with a great degree oſ pain. The ſkin turns livid, and has a gangrenous appearance. An oozing of