examining the parts and transfixing, you want the vessels fully distended, but in tightening up the ligature, no such fullness or distension is required. The tightening of the ligature should be done during anæsthesia, for this part of the operation is very painful.

The mode of procedure is to enter the needle on the anterior and outside of the scrotum, near to the top of the mass of varicose veins; then traverse the scrotum completely, so that the needle shall pass behind the veins and make the exit on the opposite side. Then reenter the needle at the orifice of exit, and pass it in front of the veins and bring it out at the original point of entrance. Thus the veins are completely surrounded by the ligature. The ends of the ligature are now passed through the hole in the centre of the circular, flattened disk, drawn tightly, and tied over the section of rubber tubing. The rubber tubing should be large enough (say a half to three-quarters of an inch in diameter) to allow of springing motion, if no elastic material be used, the ligature would do its work for a short time just after being applied or tightened, and then it should be comparatively useless until such time as it was tightened again.

But if the ligature be drawn down tightly over a section of rubber tubing, the gradual expansion keeps the ligature constantly tense and up to its work. Then as the ligature remains, and is tightened from time to time, whenever the expansive power of the tubing is exhausted, it gradually cuts the vessels, and so works its way out. Instead of the rubber tubing, a piece of ordinary erasing rubber, bent so as to act as a spring, may be substituted. The process ought to be completed in a week's time or less. If it is not, it is because the ligature has been neglected, and allowed to remain so lax that it could not do its work. It should be tightened every day, or the result will be needlessly delayed.

I introduced this operation several years ago, and have resorted to it since without hesitation, in both hospital and private practice, and have found it very effectual. It is easy of performance, involves no special danger, and is an operation upon which reliance may be confidently placed.

THE CAUSES OF PUS IN THE URINE, AND THEIR DIFFERNTIAL CHARACTERS.

A Clinical Lecture delivered on March 21, 1879, being the last delivered by the late Charles Murchison, M.D., L.L.D., F.R.S., Physician to and Special Lecturer on Clinical Medicine at St. Thomas's Hospital, London, *(Med. Record)*.

The characters of the pus found in the urine are different in different cases. Sometimes, soon after micturition, when seen in a test-glass, the urine is in its upper part quite clear, while the pus which has deposited appears as a more or less creamy layer at the bottom. At other times, notwithstanding the urine has been passed for some little time, it is everywhere alike turbid with pus, which remains permanently diffused. The first urine is acid, and contains ordinary pus; the second is alkaline, more or less viscid and gelatinous, and contains altered pus.

The tests used to determine the presence or absence of pus in the urine are; the heat and nitric acid, the liquor potassæ, and the microscopetests. The first, the ordinary test for albumen, produces in the first or acid urine a greater or less opacity in the clear portion, and a much more marked one in the creamy layer. A deposit of pus is at the same time distinguished from one of pale lithates, both of which appear alike to the naked eye, since the latter would be cleared up by this test. If the second or alkaline urine be heated, it becomes a little more opaque (phosphates being precipitated,) when, if nitric acid be added, it becomes again a little clearer (the phosphates being again dissolved;) so that the two leave its turbidity much as it was before, the pus remaining unaltered. If liquor potassæ be added to the acid urine, the pus becomes viscid and gelatinous, "ropy." If the precipitate be phosphates instead of pus, this change does not take place. In the alkaline urine this change has already been effected. With the microscope, which gives the best evidence, if pus be present, pus-corpuscles are seen, identical in appearance with white blood-corpuscles. How, then, can they be distinguished? you ask. They can not be; they are, in fact, only white blood-corpuscles in the wrong place. If treated with a drop or two of acetic acid, the granular contents in each disappears, and in its place a nucleus, often three-lobed is seen.

The pus in pyuria comes from five sources: I. The female genital organs; II. The urethra; III. The bladder; IV. The kidneys and ureters; V. Abscesses which burst into the genito-urinary channels.

I. If the pus be from the female genital organs, it is due to one or more of the principal causes; A. (Acute and chronic vaginitis (vaginal leucorrhea); B. Uterine leucorrhea; C. Ulceration of the cervix uteri; D. Cancer of the uterus; E. Lochial discharge; F. An abscess, as one due to pelvic cellulitis, bursting into the genital organs. These are distinguished from other causes by: 1. The clinical history and the symptoms of one or more of these affections; 2. The microscopical examination of the urine, in which may be found pavement-epithelium from the vagina, cylindrical epithelium from the uterus, or cancer structure; 3. A purulent discharge independent of micturition; 4. The absence of pus from the urine when drawn off directly from the bladder by a catheter.