nature of the affection. I regard this as one of the most reliable symptoms. The cervix may be lacerated, the edges everted, with an intensely granular degeneration of the mucous membrane; and yet, on withdrawing the finger, no trace of blood is detected, showing that the case is not malignant.

The age of the patient will also assist us. Cancer of the uterus is comparatively rare before 35, although I have seen fatal cases so early as 26. After the menopause, if a patient begin to lose blood *per vaginam*, there having been an interval of a few years, the case is pretty sure to be malignant in nature, provided alcoholism can be excluded. We must not forget, too, that cancer does not invariably begin in the cervix uteri; it may arise in the fundus uteri. These cases are more numerous than generally supposed.

The nature of the discharge in cases of epithelioma of the cervix is generally very characteristic. It is not the usual muco-purulent secretion met with in many instances, where the cervix is merely the seat of granular degeneration, or the vagina is in a state of chronic inflammation. It is more of a serous or sero-sanguineous nature, having a peculiar characteristic pungent odour, acrid, and producing excoriation of the vulva and surrounding surfaces.

The character of the pain in malignant disease is different from that met with in mere chronic hypertrophy of the uterus, or granular degeneration of the cervix. In the former case, the pain is almost invariably worse at night, when the patient is lying down; whereas in the latter the pain is worse on standing, and relieved when the recumbent posture is assumed.

The so-called cancerous cachexia is not always a reliable symptom. It is often simulated in cases of hæmatocœle, and where persistent or frequent recurring hæmorrhage from a projecting intra-uterine fibroid or polypus occurs. Besides this, when the disease has advanced so far as to cause the constitutional cachexia, the local condition is generally so evident as to preclude any error in diagnosis.

REMARKS ON THE EMPLOYMENT OF CUCAINE.

By R. SHALDERS MILLER, M.B., B.S. Lond., F.R.C.S.,
Senior Surgeon to the Western Ophthalmic Hospital.

FOR nearly a year and a half, cucaïne has been extensively used in this and other countries in a great variety of cases. At present, it seems to be undergoing revision, which may lead to a knowledge of the limits of its application. It is, perhaps, remarkable that a drug with such powerful physiological properties should have produced comparatively little harm, whether locally or internally administered. The case recorded by Dr. De Havilland Hall, in the *Lancet* of November 21st, is the only one of which I have heard, where any dangerous effects followed its use; in the other cases of unpleasant consequences recorded, the symptoms a good deal resembled those attending a boy's first experience of tobacco. I have witnessed such results in only one case out of nearly two hundred instances in which I have used it; and in that case the patient was a man very much out of health from poor living, and I believe that the symptoms then were as much due to fear of the operation (tapping the anterior chamber of the eye) as to the cucaïne.

In another case, where I had subcutaneously injected two grains of cucaïne for the removal of a mass of indurated glands, nearly as large as the fist, from the posterior triangle of the neck, the patient had a violent attack of roseola, beginning the day after the operation; and possibly this may be attributed to the cucaïne. I have seen very severe roseola follow the hypodermic injection of morphine in one instance, and in two cases after the use of a suppository containing half a grain of morphine. I have never, as yet, seen any ill effect, locally, from the application of cucaïne; probably because I have invariably used a perfectly fresh solution. It is a convenient plan to keep the solid cucaïne in a long narrow tube bottle, with one grain divisions engraved on it. One grain or more can then readily be poured out; or, if it be desired to use less than a grain, that quantity can be divided into halves or quarters on a clean piece of paper, and the solution prepared on the spot, for cucaïne dissolves in cold distilled water in a few seconds.

I have thus had no experience of the growth of mould in the solution, but I cannot doubt this has been the cause of those disasters which have ensued upon the application of cucaïne to the eye. I once nearly lost an eye, upon which I had performed iridectomy, through applying some atropine solution, in which I afterwards found an abundant development of mould. Cucaïne has been said to possess a feeble antiseptic power, and this has also been denied because of its liability to the growth of mould. But boracic acid is an antiseptic,

as regards low animal organisms; yet it does not prevent the development of mould in vegetable infusions. I have frequently used cucaïne very freely in squint operations, applying it first to the surface of the eye, and, after opening the conjunctiva and the capsule of Tenon, injecting several drops into the latter before dividing the tendon; and no bad effect, either local or general, has so far ensued.

Of the gelatine discs I can say but little, having seldom used them; but I have also not met with any bad results from them. In the form of an ointment, with vaseline or a fatty basis, cucaïne appears to keep well, but in this shape its applicability is limited. Cucaïne paralyses the terminations of the ordinary sensory nerves; this anæsthetic effect is heightened by the contraction of the blood-vessels which it produces; and the latter action renders it very useful in superficial inflammation of mucous surfaces, especially those of the eye and the urethra.

As to the strength of the solutions used, this will vary according to the structure to which the cucaïne is applied, the mode of application, the nature of the operation about to be performed, and the severity of inflammation, pain, or irritation.

For intraocular operations, a 2 per cent. solution is generally used, the sensibility of the cornea being readily abolished by the cucaïne; the same strength answers for the removal of foreign bodies, and for acute inflammations of the cornea and conjunctiva.

For squint and enucleation of the globe, a 4 per cent. solution answers better. The 2 per cent. solution, used in a spray such as that made for me by Messrs. Mayer and Meltzer, suffices for laryngoscopic examination, and for Eustachian catheterism where the nose is very sensitive. A 4 per cent. solution is better for removal of nasal polypus, and is best applied by the spray. For hypodermic injection, I have always used a 5 per cent. solution, and have, by its means, painlessly removed chronically enlarged lymphatic glands, several "painful subcutaneous nodules," a large vascular tumour of the thigh, etc. In such cases, some of the same solution may be applied with the spray, or with a camel's hair brush, to the cut surfaces as the operation proceeds. This produces no subsequent irritation, nor does it interfere with healing by first intention.

For excision of the tonsils, or shortening of the uvula, it is best to paint a 20 per cent. solution on the part to be operated upon; this is better than the spray, as the action of the cucaïne is limited to the part requiring treatment. I have hitherto never used a stronger solution than 5 per cent. with the spray.

In the acute stage of gonorrhœa, a saturated solution of boracic acid, containing two grains of cucaïne to the ounce, quickly relieves the pain and scalding, each injection affording immediate relief; probably a larger proportion of cucaïne might be used with advantage, but the high price of the drug has hitherto been a drawback to its liberal employment. I now always use the above injection at the very beginning of the attack, and find that it greatly shortens the acute stage, the discharge very soon becoming gleet.

An ointment containing 5 grains to the ounce is very useful for lubricating catheters, and I have used the same for lithotrites and evacuating catheters, with the result of leaving no pain or soreness after the operation of lithotomy. An ointment of the same strength, using lard as the vehicle, is very soothing in intercostal neuralgia, and has answered, in my experience, better than anything else in pruritus ani et pudendi. I have used cucaïne, also, in operating for fistula in ano, introducing a thin gelatine-cucaïne stick (freshly prepared) into the fistula, and another into the anus.

In chronic coryza and hay-fever, nothing affords so much relief as cucaïne. A 2 or 3 per cent. solution may be used in the spray for this purpose, or a snuff-powder of starch and bismuth, containing 1 per cent. of cucaïne.

A lozenge, containing from $\frac{1}{2}$ to $\frac{1}{4}$ grain of cucaïne, relieves cough arising from irritation of the throat, as, for example, where there are cheesy follicles in the tonsils.

As an internal remedy, my experience of cucaïne is limited to one case, where a pill, consisting of a quarter of a grain of cucaïne, and one grain of extract of hyoscyamus, promptly and permanently cured obstinate vomiting, due to excess in stimulants. I am aware that it has been successfully tried in sea-sickness, and possibly it might be of value in some cases of sickness due to pregnancy.

Lastly, as to the time occupied in producing anæsthesia by cucaïne; the drug acts rather slowly, and ample time should be allowed for each drop, or puff of spray, to take effect, intervals of two minutes being not too much. In this way, the greatest local effect is obtained, with the least chance of any toxic symptoms. Of course, where it is hypodermically injected, the anæsthesia is more quickly produced.