every gouty patient whose blood I have examined that the alkalinity is higher than the average alkalinity of the blood of healthy persons. The results that I have up to the present obtained show that, whereas the alkalinity of the blood of healthy adults varies from 0.161 to 0.185 per cent. of sodium carbonate, with an average of 0.167 per cent., the alkalinity of the blood of gouty patients varies from 0.193 to 0.251 per cent., with an average of 0.217 per cent., which is nearly one-third higher than that of normal blood. Now since this increased alkalinity of the blood is due to a higher proportion of sodium carbonate or bicarbonate, and since these substances both accelerate the conversion of the gelatinous bitrate into the crystalline variety, and hasten the precipitation of the latter, it is intelligible why such blood is prone to hasten and to augment the formation of gouty deposits.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, vol. ii, 1899, p. 1163.

AN OPERATION PERFORMED FOR COMPLETE ATRESIA VAGINÆ.

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SOME time ago, in consultation with Dr. Venters, of this city, I saw a young married lady, aged 28, who was said to be suffering from malformation of the vagina. Her history is briefly as follows:

She had always enjoyed robust health, though she had never menstruated, nor had she ever suffered from any vicarious hæmorrhages, nor shown any indications of any periodic disturbance, such as abdominal pains, headache, or the like. No medical advice had ever been sought with regard to her amenorrhœa, and two years ago the patient married. Coitus had been found impossible, and the patient now sought relief from her distressing condition. In order to make a thorough examination of the pelvic organs chloroform was administered, when the following conditions were noted:

The patient was well developed, though rather thin; the mammae were somewhat above the average size, and the nipples were well formed. The mons veneris and labia majora were normal, the labia minora somewhat short and deficient in bulk. The clitoris and urethra were normal. Between the meatus and the anus there was a perfectly flat area of thin skin, which at its centre (that is, opposite the spot at which the vagina ought to have been) presented a somewhat pinkish and moist appearance and partook slightly of the nature of mucous membrane. There was no infundibuliform depression, however, at this situation. On rectal examination the urethra could be felt very distinctly under the finger, but there was no trace whatever of a vagina. By the bimanual method a small atrophic uterus, about the size of an almond, was easily felt, as were the ovaries, also much below the normal size, the left being slightly the bigger of the two and about the size of a haricot bean. The small uterus could be pushed freely about in the pelvis, and there was no distended upper vaginal segment or *cul-de-sac* present, as is often the case.

It was evident from this examination, as well as from a consideration of the menstrual history of the patient, that the uterus and ovaries were functionless, and, consequently, that any operation which could be performed would only be for purposes of cohabitation, and not of maternity.

This state of matters was explained to the patient and her husband, and they expressed a very strong desire to have the operation, done as the patient was suffering a great deal from the mental distress commonly met with in such circumstances, and had lately been losing flesh rapidly. The patient being chloroformed and put in the lithotomy position, the following operation was performed:

An H-shaped incision was first made, the uprights of which, some 3 inches in length, ran from the lower extremity of the labia minora to a little beyond the anus on each side; the horizontal limb of the H (½ inch in length) lay midway between the meatus and the anus. The flaps formed by these incisions were then reflected back to their respective bases; the loose cellular tissue in the recto-vesical space was then freely opened up with the fingers and a large vaginal opening made. In the course of this part of the operation the small uterus was distinctly felt and was pushed upwards with its peritoneal covering, the peritoneum not being opened.

A second pair of flask-shaped flaps, about 7 inches in length and 3 inches wide, were then raised by making an incision which began on each side

just below the tendon of origin of the adductor longus, passed obliquely downwards and outwards parallel to the buttock fold, and was brought back to meet the top of the upright of the H incision on each side respectively. These two large flaps were then slid to meet each other in the middle line, with in the first instance their raw surfaces laid flat against one another, and they and the two small flaps were then united along their free edges with a continuous suture of fine catgut until a body somewhat resembling a large penis, entirely covered on its outer surface with skin, projected from the middle line opposite the new vaginal opening which had been made. All that now remained to be done was to invaginate this into the opening whose walls it was designed to clothe, and by the introduction of a large plug of iodoform gauze to keep the raw surfaces of the new vaginal opening and its covering in close apposition with each other.

When the legs were brought down from the lithotomy position, it was found that the edges of the large buttock wounds fell together so accurately that a few horsehair stitches kept them in position without the least tension, and healing took place by first intention, a mere linear cicatrix being left along the line of the buttock fold.

The iodoform gauze plug was left *in situ* for ten days, and when it was removed it was found that the whole of the internal parts had entirely healed with the exception of one small spot about the size of a split pea, which soon cicatrised. In order to prevent cicatricial contraction in the new passage, a difficulty which has been found by many operators so hard to obviate, I had a dilatable indiarubber bag made, 6 inches long by 2½ inches wide, with a stem and stop-cock attached, so that being rolled up and introduced empty it could be dilated to any desired extent with air by means of a Higginson's syringe. This bag was worn for half an hour twice a day after the gauze plug was finally removed, and the patient still introduces it occasionally as a precaution against contraction. The vagina is about 5½ inches in depth, and the bag is pushed in almost its entire length.

The patient's bowels were kept confined for 10 days after the operation, and her water was drawn off thrice daily. The pain and constitutional disturbance were almost nil, and in three weeks she was allowed to get up on the sofa.

A few days ago I received a letter from her, in which she says "... I can walk quickly, and have no discomfort except after being overfatigued or sitting too long on hard seats. Marital relations are quite easy, and Mr. and I agree in pronouncing the operation an unqualified success. I am already a good deal fatter!"

Two points of interest suggested themselves with regard to the skin flaps which covered the walls of the new vagina: First, how far the skin of the buttock would take on the characters of mucous membrane similarly to what one finds in the skin of the cheek when used to fill up gaps in mucous surfaces in plastic operations about the face; and secondly, how far and how soon the nerves of the new vaginal walls would give the patient the sensation that they belonged to her vagina and not to her buttocks.

With regard to the first point, it was interesting to notice that, as usually happens under such circumstances, there was a complete desquamation of the epidermis covering the flaps in the shape of a cast, which separated about a fortnight after the operation. The skin lining after this appeared to remain somewhat redder and smoother, but sufficient time has hardly yet elapsed to judge what further change in this direction may happen.

In regard to the innervation, at first the patient had very little sensation when the vaginal skin-covering was touched with a probe, but was rather inclined to refer this slight sensation to the buttock. After four weeks she felt it as being "in front of the bowel." She now reports it as feeling as more decidedly in the position of the vagina, though sensation is still rather dull. Here, again, it will be interesting to notice any further change that may happen in the course of time.

In an interesting digest of the Recent Literature on Atresia of the Vagina, Dr. Ballantyne¹ mentions a case of atresia operated upon by Paul Walton.² Here there was evidence of a functioning uterus and ovary, and Walton accordingly opened Douglas's pouch, pulled down the cervix, opened it, and stitched it to skin flaps taken from the vulvar infundibulum. In such a case, however, as the present one such a step as opening the peritoneum was not called for; but where there are evidences of physiologically active uterus and ovaries, it would appear to be the most certain and satisfactory method.

Sneguireff's method of excising the coccyx, dividing the rectum, making a new anus in the coccygeal region, and utilising the lowest portion of the gut to make a new vagina, will probably for various reasons not commend itself to many operators.

REFERENCES.

¹ Scottish Med. and Surg. Journal, June, 1899. ² Belgique Méd. Ann. 5, 354. 1898.

THE Congress of the Italian Obstetrical and Gynæcological Society will be held in Pavia in October.