intercostal vein into the superior cava. Again, the great hypertrophy of the right ventricle is to be explained partly by the extra effort required to propel the excess of blood on the venous side of the heart; partly, perhaps, by the impeded passage of a mixture of arterial with venous blood through the pulmonary arterioles: an impediment analogous to that which a mixture of venous with arterial blood encounters in the systemic arterioles. On the other hand, the deficiency of blood and of pressure in the systemic arteries is indicated by the radial pulse being "feeble and rather small", and by the "normal second sound (valvular click) being scarcely audible". There is, I admit, a deficiency in this part of my clinical record. I ought to have noted the second sound over the pulmonary and the aortic valves respectively. It seems probable that, while the aortic second sound was enfeebled by the want of tension in that vessel, the pulmonary second sound to the left of the sternum may have been intensified by the increased tension resulting from the hypertrophied right ventricle and the before suggested resistance in the pulmonary arterioles.

This case throws no light upon the disputed question of the relative share which venous turgescence and the admixture of venous with arterial blood respectively have in causing cyanosis. As I have already pointed out, there was abundant evidence of systemic venous engorgement; but there was probably also some mixture of venous with arterial blood in the left auricle and ventricle, and therefore in the systemic arteries. It seems likely that this would occur in the following mode. During the systole of the auricles, the right auricle, in consequence of the influx of blood from the left through the foramen ovale, would empty itself less completely than the left; then, during the succeeding auricular diastole, some blood would flow from the partially filled right auricle into the left. There would be a to-and-fro tidal flow of blood through the open foramen ovale, an active propulsion of arterial blood to the right during the auricular systole, and a passive flow of venous blood to the left during the auricular diastole. The general result would be an excess of blood in the right cavities of the heart and in the whole systemic venous system, with some mixture of arterial and venous blood in the left cavities and in the systemic arteries.

In a paper on Cyanosis (*Medical Times and Gazette*, September 1859), Dr. Tilbury Fox argued from *à priori* considerations that, if a patulous foramen ovale gives rise to a murmur, the murmur must be presystolic and synchronous with the auricular systole. It is only within the last few days that I found a reference to Dr. Fox's paper, and so had the opportunity of reading it. He will probably be interested to find in the case which I have here briefly recorded a confirmation of his theory published nearly twenty years ago.

Finally, I would remark that this case appears to me to afford confirmatory evidence in support of Dr. Gairdner's auricular systolic theory of the so-called *presystolic mitral murmur*.

CASE OF UTERINE HYDATIDS TREATED BY THE INTRA-UTERINE INJECTION OF HOT WATER.

By LOMBE ATTHILL, M.D.,
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On the 18th of December last, I was asked to see a lady stated to be threatened with a miscarriage. She was a very delicate woman, a member of a family of whom several had died of consumption, she herself having suffered from ulcer of the stomach. On my visiting her, she stated that she had reached the twelfth week of pregnancy, had that morning been attacked with hæmorrhage, but was quite free from pain. On making a vaginal examination, I found the uterus to be of the size corresponding to the three months of pregnancy, and the os very slightly dilated. I ordered an ounce of the infusion of ergot to be given every third hour, and enjoined absolute rest. Everything went on satisfactorily for some days; the hæmorrhage ceased; she suffered no pain, and felt so well that I had much difficulty in inducing her to observe the recumbent posture. On the 20th, she began to go about; and on the 21st, having stood about a good deal, hæmorrhage again set in, this time profusely. On seeing her after the lapse of some hours, I found her very weak. She had lost a great deal of blood, and it continued to flow. The os was about the size of a threepenny-piece. There were not any pains, and nothing could be felt inside the os. I decided on plugging the vagina, and recommended the exhibition of ergot.

The next morning, I removed the plug, and was disappointed to find that no portion of the ovum protruded; but the os uteri was more patulous, and something soft could be felt inside it.

As she began to lose blood again, I decided to dilate the os and remove the ovum. With this view, I introduced a large sponge-tent. This I removed in six hours, but was again disappointed at finding that no ovum could be detected; while the hæmorrhage continued, and no uterine action had been excited.

Matters were now becoming serious. The patient had become very weak. Evidently the uterus must be emptied of its contents, whatever it was; and the hæmorrhage checked. After some hesitation, I decided on trying the effect of hot water, and accordingly introduced the tube of a Higginson's syringe into the uterus, and injected about a pint of water at the temperature of 112 deg. This within ten minutes induced uterine action. The pains were very sharp; and in a short time a mass, which on subsequent examination proved to be hydatids, was expelled. No further hæmorrhage occurred for about six hours, when, pains again setting in, slight hæmorrhage, followed by the expulsion of another mass of hydatids, occurred. From this time, no further trouble was experienced. The lady made a rapid recovery.

In this case, I was quite uncertain as to what the contents of the uterus might be. I had not previously heard of hot water being injected in cases of abortion; but my experience of it in *post partum* hæmorrhage was so favourable, that I resolved to try it in this case; the only other alternative being either plugging the vagina again or the continuing of the process of dilating the cervix. Either of these courses seemed to me, under existing circumstances, to be by no means free from risk.

My idea in injecting the hot water was to restrain the hæmorrhage, and I was not prepared for its acting as such a powerful stimulant to the uterus as to induce uterine action within the lapse of a few minutes. I need hardly add that I was much gratified by the result.

Since this case occurred, I have treated three cases of abortion accompanied by hæmorrhage in a similar manner. In two of these, the like results followed; namely, the exciting of uterine action and the arrest of hæmorrhage. In the third case, the hæmorrhage was arrested for twelve hours; but no pains followed. Hæmorrhage then recurring, I again injected hot water, with similar results. The ovum was not expelled till the lapse of twenty-four hours after the second injection.

Judging from these cases, I look on the treatment of hæmorrhage occurring during abortion by the injection of hot water (of a temperature not under 110 deg.) as perfectly safe; and that it is, on the whole, more reliable and satisfactory than any other method.

CLINICAL MEMORANDA.

CATGUT DRAINAGE.

In reply to Mr. Chiene, I beg to state that my assertion that catgut drainage is most inefficient is based upon the following facts. 1. After the gut has become saturated by the contiguous fluids, it ceases almost entirely to drain at all. In proof of this, the following experiment may be performed. Place one end of a skein of catgut in a glass vessel containing water, and let the other end hang over the side of a second empty vessel: it will be found that very shortly the water begins to come over by capillary attraction, but, as soon as the point of saturation is reached, the flow becomes quite arrested, owing to the increase of friction which capillarity fails to overcome. 2. Catgut drainage is inefficient, because it does not remove the fluids from the deepest part of a wound, but only acts upon the fluids near the surface. This statement is true in all the cases in which I have seen catgut employed for the purposes of drainage, where a skein is used which traverses the wound from side to side but does not touch at any point the deepest parts of the incision: this, perhaps, might, to some small extent, be obviated by pushing one end to the bottom of the wound, and allowing the other end alone to hang dependent from the line of incision; but, if so placed, the deeper portion would in a short time become quite sodden, and no longer convey any of the fluids to the other from the end of the skein, even if it were possible, which I question, to maintain the gut in this position. 3. Catgut is inefficient, because it softens and breaks down before the wound has ceased to discharge. After a few days, the skein of catgut divides into two and comes away on traction at each end, and this very generally before drainage can be dispensed with. It may be affirmed that this constitutes no real objection, as it is an easy matter to introduce a fresh skein; but, in reply to this argument, I should say that such fresh introduction cannot take place without, in many cases, an undesirable opening up and separation of newly adhering tissues.

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