BETTER HYSTEROCOPIC VISION-SALINE, CO_2 OR DEXTRAN?*

by

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Since endoscopy has added a new dimension in our speciality especially as an aid to diagnosis besides its therapeutic value, hysteroscopy now carries an added importance, a new Vista opened which till today was a blind alley.

Uptil now we have had the tremendous use of the laparascope to give a bird's eye view of the pelvic organs. Now the hysteroscope has made it possible for the clinicians to visualize, diagnose and treat various uterine conditions and to the physiologists and researchers to study the internal milieu and the various intricacies of the endometrial patterns.

For a successful outcome of those studies, vision plays the most important role in hysteroscopy. We, at the B. Y. L. Nair Hospital, and T. N. Medical College, Bombay have made preliminary attempts to have a better vision using three media viz. saline CO_2 and Dextran.

Although a small series is presented we have come to some definite conclusion regarding their advantages and disadvantages.

Normal Saline

Normal Saline was used as a medium in 75 cases. A saline drip was set up which was connected to the inlet channel of the hysteroscope. The outflow was drained inot the bucket A pressure bulb was connected to increase the pressure of flow. Saline-laden hysteroscope was introduced into the canal after dilatation upto No. 8.

The various difficulties encountered were:

1. Distension of the cavity was not adequate.
2. Sharp images were not obtained.
3. Fluid flow under constant pressure could not be maintained and once the pressure fell, the walls collapsed and visibility was hampered.
4. Endometrium was seen floating in the medium rather than as it should be in its normal situation.
5. Because of the illumination, the fluid reflected the light and therefore the interpretation of the lesion became difficult.
6. Constant flow of debris, particles, was seen in front of the lens.
7. It is messy and there are chances of infection.

In our series of 75 cases of saline, both the cornu could be seen in 41 cases. In 15 only one cornu could be seen and in 8 cases none could be seen. In 6 cases it had to be abandoned as the whole vision was blurred because of admixing with blood as well as clots. In our series there were no cases of sepsis. Average Saline

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required for each case was about 250 ml.

Its advantages are:

1. Easy availability.
2. No danger to the patient even it it is absorbed.
3. No untoward post operative complications.
4. Simple and cheap.

Carbon Dioxide

The 'Lindemann' model of hysteo-flator was used for insufflation of carbon dioxide. This consists of the CO_2 unit which has the cylinder behind and also shows the intra-uterine pressure with the gas volumeter. The second unit consists of the suction machine which has an outlet tubing which fits on the contracervical suction cup. This instrument is based on the principal of constant pressure with a variable volume. The apparatus is set to the maximum pressure of 200 mm Hg-Flow-through volume can be set for any rate from 0-100 ml/min. which can be read on the electro-volumeter.

In our series of 30 cases, the contracervical suction cup was fitted over the end of the hysteroscope cannula and the hysteroscope with the cannula was inserted into the cervical canal. The CO_2 tubing and the light cable were attached. The tenaculum was removed and the cup pressed forward firmly on the cervix. Suction was then begun and maintained at a constant negative pressure. Now turning the light on and allowing the Co_2 flow at the rate of 100 ml./min., the hysteroscope was advanced and to be within the range of 100 mm Hg.

In all the 30 cases the following advantages were observed:

1. It afforded excellent vision.
2. The whole of the uterine cavity with the ostia were seen very well.
3. In 5 cases intermittent closure of the ostia could also be seen.
4. The cavity remained distended till the end of the procedure.
5. Endometrium was seen in its natural colour, in most areas pinkish and in some yellowish.
6. In one case of fibroid the proliferative endometrium was luxuriant with a distorted cavity.
7. Suspicious areas could be better defined with Co_2 than with any other media.
8. Possibility of excessive pressure in the uterine cavity is ruled out because of the automatic shut-off system.
9. The rate of flow of gas is controlled hence the chances of gas embolism are very rare. None of our cases had embolism, cardiac arrythmias or cardiac arrest.
10. No floating particles.

The disadvantages were:

(a) In 6 cases there was presence of bubbles which distracted vision and were broken with a probe.
(b) In some, where the cervix was irregular or hypertrophied the cup could not be fitted well, hence the leakage could not be prevented.
(c) Vigil is required on the panel hence at times it distracts the operator.
(d) If blood collects on the lens at the time of introduction it is not cleared away as in the case of fluid.

Dextran

Here 6% dextran was used. Higher concentrations of dextran is not manufactured in our country which we would

have preferred as the one used by Neuwrith *et al* (1975) viz. 32%. The set up was similar to that of normal saline. It was used in 20 cases.

The greatest advantage was that visibility was better than saline as every thing was static because of the increased viscosity. The cavity remained distended for a longer time and afforded a better view than saline. There was no floating debris or relection of light. Immediate follow-up showed an incidence of sepsis.

In conclusion, Co_2 is the best medium for better visualisation and operative procedures but the apparatus is expensive. In our country, dextran of higher percentage can replace the hystero-flater for the time being because it is cheap since the place of hysteroscopy has yet to be established. Because of its high viscosity, dextran does not mix with blood thus providing very clear images once the proper uterine dilation is obtained. In our view hysteroscopy plays a complementary role with other diagnostic procedures.

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References

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