Conclusions

The water recovery test as described is as satisfactory a means of positioning a nasogastric tube for gastric secretion tests as fluoroscopy.

Practical considerations strongly favour the use of the water recovery test for tube positioning.

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Induction of Labour by Simultaneous Intravenous Administration of Prostaglandin E_2 and Oxytocin

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Summary

In a group of 20 matched primigravid patients labour was induced by forewater amniotomy followed by intravenous oxytocin (Syntocinon) administered in escalating doses. Ten of these patients, in a double-blind trial, also received prostaglandin E_2 infused simultaneously with the oxytocin. In the combined prostaglandin-oxytocin group there was a noticeable reduction in the dosage of oxytocin required to produce effective uterine action, and the duration of labour was also reduced. No side effects were observed.

Introduction

This trial was designed to assess the possible value of combining intravenous prostaglandin E_2 with oxytocin (Syntocinon) as a means of inducing labour after amniotomy.

Patients and Methods

Twenty patients were included in the series. That is, the patients were all healthy primigravidae aged less than 30 years with a live singleton pregnancy and the fetus presenting by the head. The only obstetrical abnormality was that all the pregnancies were at least seven days past the expected date of confinement.

Forewater amniotomy was performed initially in all cases. Immediately thereafter an intravenous infusion of oxytocin was begun at a rate of 0·66 mU/min. This rate was doubled every 15 minutes until adequate uterine response was produced, as adjudged by clinical observation.

In all patients, and simultaneously with the start of the oxytocin, an infusion was administered by a Palmer pump through a micropore filter into the same intravenous cannula. This solution was either prostaglandin E_2 or a placebo (normal saline), the choice of solution being made in the hospital pharmacy by drawing lottery cards on a random basis. The solutions were delivered to the labour suite in identical containers and were indistinguishable. A constant Palmer pump setting was used throughout labour for all cases so that the rate of a prostaglandin E_2 infusion would be 0·5 μg/min.

Results

Oxytocin Rate.—The mean maximum oxytocin rate of infusion in the oxytocin-prostaglandin group was appreciably less than in the group given oxtyocin alone: 16·9 mU/min ±3·7 S.D. (range 5-43) and 71·4 mU/min ±19·1 S.D. (range 11-213) respectively. This difference in rate is highly significant ($P < 0.025$).

Duration of Labour.—The mean duration of labour in the oxytocin-prostaglandin group was less than in the oxytocin-placebo group: 453 min (range 278-823) and 591 min ±63 S.D. (range 331-827) respectively. However, this difference is not significant ($P > 0.05$).

Delivery.—One patient in the oxytocin-placebo group was delivered by caesarean section. After a labour lasting 11 hr 50 min full cervical dilatation had not been achieved, and both clinically and radiographically there was cephalopelvic disproportion of a minor degree. Fetal distress did not occur. The remaining 19 patients in the series were all delivered by the vagina though seven of the oxytocin-prostaglandin group and five of the oxytocin-placebo group required instrumental assistance by forceps or vacuum extractor.

Neonatal Status.—There was no perinatal death and no neonatal morbidity in the series. Two of the babies delivered by the combined infusion had low Apgar scores (2 at two minutes and 2 and 4 respectively at five minutes). Both these babies were delivered spontaneously with no intrapartum signs of fetal distress. Neonatal asphyxia was diagnosed in both babies. After routine resuscitation, both progressed normally and were discharged from the special care nursery after routine observation for 24 hours.

Side Effects.—There was no significant side effect observed in the series. This is of interest since nausea, vomiting, and diarrhoea occur not infrequently with prostaglandin and can, in a small proportion of cases, be troublesome to the patient. Three of the oxytocin-prostaglandin patients developed very slight venous erythema proximal to the infusion cannula.

Discussion

Induction of labour by amniotomy followed by intravenous oxytocin administered in escalating doses is now a well-estab-

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lished and accepted technique. However, it does have an inherent disadvantage in that there is a wide variation in the individual patient's response to oxytocin. Refined infusion pumps are thus required (MacVicar and Howie, 1967; Francis, Turnbull, and Thomas, 1970) or, if the Syntocinon is given in dilute solution, manual adjustment of the drip rate is wasteful of valuable nursing time. Even with these techniques, there is still an induction failure rate, probably owing to failure of the uterus to respond satisfactorily to exogenous oxytocin in some instances (MacVicar, 1971).

In the series described, when a combined prostaglandin E_2 and oxytocin infusion was administered the range of oxytocin escalation was about a quarter (24%) of that which was required when the drug was infused alone. Also, from the comparative results of the series, on average the prostaglandin component of the combined infusion was apparently equivalent to a constant base line infusion of 10 units of oxytocin in 500 ml of solution at about 41 drops a minute (55 mU/min). We suggest that the simultaneous combined regimen is acceptable and enables adequate uterine stimulation to be achieved with a greatly reduced range of oxytocin escalation. The reduction in the total amount of oxytocin infused will tend to minimize the antidiuretic effect which may possibly be associated with oxytocin infusion (Liggins, 1962). Finally, the total duration of labour may also be reduced when the combined infusion is used.

There is accumulating evidence to suggest that prostaglandin and oxytocin are both involved in the normal physiological process of labour (Brummer, 1971; Gillespie, 1972; Gillespie, Brummer, and Chard, 1972). It remains to be evaluated whether this combined regimen will reduce further the dwindling proportion of patients in whom induction of labour by amniotomy and oxytocic infusion is unduly prolonged or is totally unsuccessful.

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Herpesvirus hominis Infection in Patients with Myeloproliferative and Lymphoproliferative Disorders

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Summary

Infection with *Herpesvirus hominis*, often associated with oral ulceration, was found to be more frequent in patients with myeloproliferative and lymphoproliferative disorders than in normal populations or patients with other diseases. This increased frequency was not associated with any deficiency of the humoral antibody response, suggesting a possible impairment of cell-mediated immunity. The otherwise untreatable oral lesions appeared to respond effectively to local irradiation.

Introduction

The frequent occurrence of severe oral ulceration in patients suffering from various types of leukaemia and lymphoma prompted an investigation into the aetiology of the oral lesions. Clinical impressions suggested an herpetic origin and others have commented on the frequency of herpetic infections in patients with myeloproliferative and lymphoproliferative disorders (Stewart, 1950; Ultman *et al.*, 1959; Muller *et al.*, 1972) few patients, however, have been subjected to virological investigations. In the present study virological investigations were used to establish the aetiological role of *Herpesvirus hominis* (herpes simplex virus) in the pathogenesis of the lesions observed. The study was further extended to determine the frequency of herpetic infection in patients with myeloproliferative and lymphoproliferative disorders, and to relate any increase to an abnormality of the humoral immune response.

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Patients and Methods

A total of 69 patients attending a haematology clinic for a myeloproliferative or lymphoproliferative disorder, of whom 15 had developed oral ulcerative lesions, were investigated for evidence of infection with *H. hominis*. For the purpose of this investigation 579 hospital inpatients who had had throat swabs taken for virological investigation of respiratory infections between 1966 and 1970 served as control subjects.

TREATMENT

The drug regimens for the myeloproliferative and lymphoproliferative disorders were conventional dosages of appropriate combinations of the accepted antimitotic agents.

Oral and perioral lesions were treated by local irradiation using a 100 kV superficial therapy *x*-ray apparatus delivering 100-200 rads. The treatment was repeated two or three times on alternate days. A few patients who were too ill to leave the ward received a similar dose of radiation from a radioactive strontium plaque applied to the ulcerated surface.

SPECIMENS

Two throat swabs were taken from each patient undergoing investigation and a further swab was taken from any oral ulcerative lesion. Swabs moistened with transport medium were rubbed over the lesion or over the posterior pharyngeal wall and faucial areas and were then expressed into 1 ml of transport