

## USE OF OXYTOCIN IN UNCONVENTIONAL OBSTETRIC CASES

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The assets and dangers of oxytocin have been well established for over a quarter of a century now. Rightly, the risk of the use has been emphasized, but at times the phobia is so great that we felt that if this fear is replaced by courage and vigilance over a greater sphere of observation then, the dictum that "like Fire, oxytocin is a good servant, but a bad master" could be made to serve even better.

### *Aim of the Study*

This study consists of 200 cases where oxytocin was used to initiate labour, enhance uterine action in the 1st and 2nd stages, prevent and control atonic post-partum haemorrhage. Though we used it in conventional cases, the emphasis of the study was in the use of oxytocin drip where the use was considered risky to the mother and the child by traditional conventions.

For sake of brevity, only the observations of these unconventional cases are presented.

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These cases were studied in our unit at the L.T. M.G. Hospital.

### *Group I*

For induction of labour:

(1) Post-maturity ..	9
(2) I.U.F.D. ..	30
(3) Severe pre-eclampsia and eclampsia ..	9
	48

### *Group II*

Acceleration of labour (1st and 2nd stage)

(1) Accidental haemorrhage ..	24
(2) Placenta praevia ..	13
(3) Prolonged labour ..	74
(4) Twins ..	9
(5) Breech ..	9
	129

### *Group III*

III stage of labour (PPH) .. 23

Total—Groups I+II+III = 48+129+23 = 200 cases.

Since the risk of inco-ordinate hyperaction, threatened rupture, to rupture uterus was highest in Group II, we used the drip in concentrations of 1, 1.25, 2,

2.5 to 5 units in 500 ml of Dextrose (5%) at the rate of 15-30 drops per minute which is equivalent to 0.2 to 20 milliunits per minute. Care was taken to evoke a normal clinical response with the least concentration possible.

Clinical judgement was the only guide in the absence of equipment to record intra-amniotic pressure and foetal monitoring.

Uterine activity was considered satisfactory when the retraction lasted for 30-45 sec. to palpation at intervals of 2-3 minutes.

Apart from the usual frequent recording a maternal pulse, blood pressure,

foetal heart rate, the emphasis in observation was the normalcy of uterine action, descent of the presenting part, progress of anterior shoulder, and the normal progress of labour.

Out of 129 cases, in 12 the presenting part was above the brim, in 42 at the brim i.e. 54 were floating, out of which 2 subsequently required caesarean section, the rest delivered vaginally. There were 6 stillbirths and 2 neonatal deaths. Two of these were due to pre-maturity (wt. = less than 1500 G). The other 4 still births: 2 hand prolapse with cord compression, 1 breech, 1 severe intrapartum and postpartum asphyxia.

Out of 129 cases, 42 were unconven-

TABLE II  
Age

Total cases	Below 20	20-30	30-40	Above 40
129	14	53	42	20
100%	10.9%	40.6%	32.8%	15.7%

Parity

Total cases	Primi	II, III, IV	V and above
129	46	68	15
100%	35.9%	53.2%	10.9%
			2— VII 1—VIII

TABLE III  
Modes of Delivery

Modes of delivery	Total cases	Per cent
(1) Spontaneous vaginal delivery	95	73.4
(2) Assisted breech	7	5.2
(3) Low forceps	14	10.4
(4) Midcavity forceps	8	6.3
(5) L.S.C.S.		
(Foetal distress — 3)		
(Maternal distress — 2)		
(Failure to progress — 1)	6	4.7
Total	129	100.0

tional cases, in which the use of oxytocin is not universally accepted.

TABLE IV

1. Grand-multiparity with uterine inertia	14
2. Previous L.S.C.S.	8
3. Twins	9
4. Breech	9
5. Transverse lie with hand and cord prolapse	
(1 = dead baby	
1 = moribund baby)	2
	42

Out of 14 grande-multiparae, which included 2 VII and 1 VIII para, oxytocin was started with 1.25 units in 500 ml of dextrose i.e. 2 mu/min, and the rate increased as necessary. Eleven of these responded well and delivered spontaneously within 6 hours. There were no complications. One required L.S.C.S. for foetal distress and 2 had to be assisted with midcavity forceps. Only 2 babies, one of caesarean, and one of forceps had to be resuscitated. In all cases the drip was continued in the 3rd stage using 10 units/500 ml as a prophylaxis against PPH.

There were 8 cases of previous L.S.C.S. 4 for uterine inertia or foetal distress, 2 for APH and in 2 the cause of the previous C.S. was not available but at present foeto-pelvic disproportion was ruled out. All 8 delivered normally. After delivery the uterus was explored and no trauma or weakness in the lower segment was detected.

In 9 breech cases, 7 had assisted breech deliveries without difficulty. One baby was severely asphyxiated due to aspiration. One required forceps for the after-coming head, and there was 1 stillbirth, due to untimely haste exhibited by a junior House Surgeon who tried to de-

liver the baby before full dilatation of the cervix.

Of the 9 twin pregnancies with uterine inertia, in 5 the inertia was overcome with oxytocin 1.25 to 2.5 units/500 ml after ensuring that the lie of the first baby was vertical. All 5 delivered within 16 hours. In the remaining 4, in 2 cases the second twin was delivered by pulling down the leg, and in the other 2, oxytocin dose was increased to 5 units/500 ml after ensuring the cephalic presentation. There were 2 fresh still born premature babies and 3 died of prematurity and pulmonary infection within the first week.

We gave a trial of oxytocin in 2 cases of transverse lie with hand prolapse, one with a dead baby and the other with hand and cord prolapse, the pulsations being less than 40/min. The cervix was about half dilated. Oxytocin 1.25 units succeeded in further dilatation of the cervix, so that internal podalic version and breech deliveries could be effected without resorting to caesarean section with frustrating outcome.

In all the above cases uterus was explored and found to be intact. There was traumatic PPH due to cervical tears in 2 (1 grand multipara, +1 breech case) which were sutured.

In all 200 cases oxytocin 10-20 units/500 ml were started after the birth of the babies to prevent atonic PPH, with ergometrine if necessary to control PPH. Out of 23 cases, 20 responded favourably. In 3 cases blood was necessary and in 1 case who was anaemic 3 bottles of blood were given to resuscitate her. In both the cases of cervical tear no blood was required. Puerperium was uneventful. No adverse effect of oxytocin was observed in the maternal pulse or renal function.

### Discussion

The danger of oxytocin is placental insufficiency that results through persistent raised intra-amniotic pressure through hyperaction, and the great danger of rupture uterus. Though by toco-graphy and the like, the former is easily diagnosed, we feel that by acute clinical observation of the nature of the pains and the progress of the factors in labour, right conclusions are not impossible. The important thing is for the obstetrician to understand the characteristics of labour in its essence.

Rarely if at all, lower segment ruptures occur suddenly. There is a long phase of stretching of the lower segment, threatened rupture to the ultimate catastrophe of rupture. Over critical observation and analysis for a long time we conclude that the uterus does not rupture suddenly—only the discovery is sudden. It is not oxytocin that ruptures a uterus, for endogenous oxytocic action is present in every labour. Ruptures result from failure to observe where exactly the oxytocin and uterine response overstep their physiological limits.

The training period of a clinician goes on till his last day, and during this time he is bound to err and be confronted by unpleasant results, tragedies and even catastrophies. When thus faced, to develop a phobia rings an end to the scientific approach. It is not through regrets that medicine has evolved. It is through the analysis of the error, to learn to get above rather than around it in future. It is dogmatic to perform a caesarean just for a previous C.S., without really trying to find out what the previous C.S. was done for, and whether the same or other adverse factors are now present.

When employed with discretion, oxytocin can be used whenever labour itself

can be permitted. Supersensitivity to oxytocin can be avoided by starting with minimal quantities but with maximum vigilance.

Turnbull and Anderson emphasised the same in 1968, and observed enormous variations in oxytocin sensitivity of the uterus. The optimum oxytocin dose therefore depends on the activity stimulated and not some arbitrary dose levels.

We also observed that the position and station of the head did not materially influence the failure rates. We could reach a favourable outcome, as we took care to reassess the pelvis and foetopelvic disproportion, and the rotation of the foetal head from time to time, and not depend on the initial judgement. It is mandatory to reassess, whenever the response to oxytocin is poor, or tends to get perverse.

Menon (1965) advises oxytocin drip in prolonged labour due to incomplete rotation and deep transverse arrest resulting from, or resulting in uterine inertia. He does not contradict, the infusion unless there is definite contracted pelvis, or definite C.P.D. This is true also for mento-anterior position. He even goes further to state that in well selected mentoposterior positions, where the baby is of average size, with no C.P.D. specially when the face has descended well into the cavity). Slow oxytocin drip produces good uterine action which aids forward rotation of the chin.

Goldman, (1959), Theobald *et al* (1956), Kramer (1957) noted that longer the inefficient uterine action is allowed to exist, the less effective oxytocin is likely to be; we concur with this statement. It is therefore essential to detect the inefficiency early and remedy the same adequately.

Driscoll (1966) analysing 143 cases of rupture uterus found 13, due to oxytocin drip, 8 were in grande-multi. He also states that with better vigilance these accidents could have been avoided.

#### Conclusion

From this small study of the conventional as well as unconventional cases, we came to the conclusion that the fear of rupture uterus is many more times exaggerated. A well cared for uterus never ruptures with a well controlled drip, neither is foetal mortality raised.

Caesareans can be avoided in many cases if a potent drug like oxytocin is used wisely and carefully.

The use of oxytocin can be extended to grand multiparae, breech, patients with a previous history of L.S.C.S., multiple pregnancies, provided the obstetrician employs mature clinical judgement and close observation. But to develop maturity one has to start somewhere.

We took the risk of this adventure under cover of the following precautions:

(A) Not relying solely on the initial judgement of:

- (1) Pelvic contraction.
  - (2) Station of the presenting part.
  - (3) Foeto-pelvic disproportion.
- (B) Revising and confirming the diag-

nosis of the above by repeated assessment from time to time as required during the course of the drip.

(C) Keeping our minds open to retrace the steps or decision.

(D) Ever preparedness and readiness to have facilities for caesarean section at a moment's notice during the course of the drip.

(E) Endowing oneself with courage and withholding from the phobia of rupture uterus through acute observation.

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