

Experiences of a rural obstetric Flying Squad service

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Introduction

A "FLYING SQUAD" service is a feature of most modern maternity hospitals. This service is essential in any area where domiciliary deliveries take place and its aim is to bring resuscitative measures to the home of the shocked patient prior to transporting her to the hospital.

In Trengganu, an overwhelming majority of deliveries — 90% — occur at home, and of these, 65% are supervised only by an untrained kampong "bidan". Cases of complications and shock are therefore high and produce high maternal mortality rates. In this environment, an effective flying squad service is vital in reducing maternal mortality.

In spite of many handicaps, a flying squad service has been operating from the maternity unit of this hospital for a number of years. The maternity unit, situated in Kuala Trengganu, serves the immediate needs of the population of a huge area surrounding Kuala Trengganu. It is also the referral hospital for the whole state of Trengganu.

The running and experiences of the squad are reviewed here and an analysis is made of the calls attended during 1969.

Transportation

The squad makes use of the ordinary hospital ambulance and this arrangement has been found to be quite satisfactory.

Staffing

Due to the shortage of medical officers, the service is manned entirely by nursing staff. The maternity staff nurse is the backbone of the service and generally she goes out alone, single-handed. If the pressure of work in the ward and the labour room is light, a staff midwife goes along as well. However, this is the exception rather than the rule. Besides the ambulance driver, an attendant also goes along.

Equipment

Only simple equipment and drugs are taken and no operative or anaesthetic equipment is included. A delivery kit and the following drugs are included: ergometrine, pethidine, morphine, paraldehyde and methedrine. Intravenous fluids taken are: 'Haemacel' two pints, normal saline two pints and 5% dextrose one pint. Due to the scarcity of blood, no blood is taken by the squad.

Area covered

The service covers a wide area indeed, answering calls from a radius of over 30 miles from Kuala Trengganu itself. This area includes the districts of Kuala Trengganu, Marang and Ulu Trengganu.

Mode of action

The call for the flying squad is taken at the maternity unit by the staff nurse in charge of the ward who

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gets all the particulars. On arrival at the home, she undertakes emergency resuscitation and when the patient is fit brings her back to hospital. The sole aim of our squad is resuscitation, and no operative procedure of any sort is performed at home.

All the maternity staff nurses are taught the principles of emergency resuscitation including the giving of intravenous fluids. The details of our management of the various types of cases are given later when discussing the cases themselves.

Analysis of cases seen during 1969

Total number of cases	=	26
Postpartum haemorrhage	=	12
Antepartum haemorrhage	=	4
Eclampsia	=	5
Prolonged labour	=	5
Maternal Deaths	=	nil

Postpartum haemorrhage

This group as expected constituted the largest

number of calls on the flying squad. Eleven out of the 12 cases were severely shocked on arrival at home. All the shocked patients were successfully resuscitated in the home prior to the journey to the hospital. The details of the 12 cases are given in Table 1.

The mainstay of resuscitation of shock from blood loss in the home has been the rapid transfusion of two pints of "Haemaccel". This synthetic plasma volume expander has, in our experience proved extremely effective in countering shock. In spite of meeting with severe cases of blood loss and the time delay involved in reaching the patient, every case was successfully resuscitated and made fit for a long and often "bumpy" journey as well to the hospital. As a temporary restorer of blood volume, Haemaccel has been found to be excellent and the squad has not been handicapped by the lack of blood. Of course, once in hospital, suitably crossmatched blood is given as soon as it is available. Manual removal of placenta was undertaken only in hospital.

Antepartum haemorrhage

There were four cases and their details are given in Table 2.

Case	Diagnosis	Condition at home	Resuscitation	Treatment in hospital
1	Ret. P. & PPH	shocked	Haemaccel	MRP & Blood
2	"	"	"	"
3	PPH	"	"	Blood
4	PPH	not shocked	Dextrose	Fluids
5	Ret. P. & PPH	shocked	Haemaccel	MRP & Blood
6	"	"	"	"
7	"	"	"	"
8	"	"	"	"
9	"	"	"	"
10	"	"	"	"
11	"	"	"	"
12	"	"	"	"

Table 1 – Cases of PPH

Case	Gravida	Diagnosis	Resuscitation	Treatment in Hospital
1	8	Accidental haemorrhage	Haemaccel	ARM – N. Del.
2	15	Placenta Praevia	Haemaccel	LSCS
3	10	Accidental haemorrhage	"	ARM – N. Del.
4	2	APH ? cause	Dextrose	ARM – N. Del.

Table 2 – Cases of A.P.H.

Case	Gravida	AN.Care	No. of Fits at home	Fits in hospital	Treatment
1	2	nil	3	nil	ARM - N.Del.
2	5	nil	7	nil	ARM - N.Del.
3	6	yes	4	nil	ARM - N.Del. Stillbirth
4	9	nil	11	nil	ARM - N.Del.
5	1	yes	5	nil	ARM - N.Del.

Table 3 - Cases of Eclampsia.

Case	Gravida	Duration of labour	Diagnosis	Treatment
1	6	3 days	Occipito-Posterior	Forceps Del.
2	1	4 days	Disproportion	LSCS
3	9	3 days	Breech. IUD	Extraction
4	7	3 days	Obstructed labour	LSCS
5	4	2 days	Uterine Inertia	Forceps Del.

Table 4 - Cases of Prolonged Labour.

Three cases were shocked and were resuscitated as described earlier. The fourth case was sedated with pethidine, an intravenous drip set up and the patient brought to hospital.

Eclampsia

The five cases of eclampsia were managed as follows: At home, an injection of 10 ml of paraldehyde was given intramuscularly. This was found to be very effective in preventing further fits during the journey to hospital. Paraldehyde - a specific anti-convulsant - was chosen as it is readily available, rapidly effective and can be administered easily by nursing staff with a wide margin of safety. Further treatment in hospital included the setting up of a lytic cocktail and the induction of labour forthwith by surgical amniotomy. The details of the cases are shown in the table below.

Prolonged labour

A total of five cases were seen. In each case, after sedation with pethidine and the setting up of a dextrose infusion, the patients were brought to hospital. The details of the diagnosis and management are given in the table below.

Discussion

The aim of a flying squad service is to bring resuscitative measures to the home of the patient and to

make her fit for the journey to hospital where definitive treatment can be undertaken in safety. It is well recognised that shock is immensely aggravated by movement and to subject a shocked patient to a journey is tantamount to killing her. The sole aim of the squad should be to fulfil this role of resuscitation. Stabler (1947) had, however, visualised a squad capable of performing a Caesarean hysterectomy on the kitchen table if necessary. This view certainly has no place in modern medicine.

Our flying squad is unique in two ways. One, it is manned entirely by nursing staff, and two, we carry no blood. This state of affairs is, of course, not from choice but due to the very limited staff we have and the scarcity of easily available blood. Sophisticated centres, whose flying squad are lavishly staffed and equipped, might consider our squad to be ineffective. However, our figures show otherwise. Every case on which the squad was called out survived and every case of shock encountered in the home (14 in the series) was resuscitated and brought safely to hospital. In all these cases, the squad was responsible for the prevention of a mortality. Further, it also shows that nursing staff with proper guidance from doctors can more than adequately undertake resuscitative measures.

There are many difficulties which this service experiences. One is, of course, the great distances co-

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vered over difficult roads. Often at least one to two hours are needed before the patient can be reached. Also, quite often, the house is a mile or two off the main road and the staff have to walk in the last part of the journey. Finding the house can be a problem as many of the kampong houses are without numbers. Trying to resuscitate in cramped conditions without proper lighting adds to the difficulties.

A major problem after resuscitation is trying to persuade the patient to come to hospital for further treatment. Often, there is a great reluctance to be admitted to hospital and much valuable time is wasted before the patient finally agrees to come in, after consulting with all the relatives. A host of relatives usually follows the patient back so that carrying the patient from the house to the ambulance on the main road poses no problem as there are many willing helpers.

In spite of the difficulties, the nursing staff are most enthusiastic and dedicated to this service, given proper guidance and constant encouragement and support by the doctor. The results speak well for their efficiency and skill and there is no doubt that many maternal lives are being saved by this service in this state. Further, the availability of a flying squad service gives confidence to the midwives working

alone in remote areas as they can readily call on the service in case of need. No doubt, in due course with improved facilities, our squad will be manned by doctors as well and blood also will be available. However, the squad in its present form has, I feel, more than justified its existence.

Conclusion

I think our experience shows that it is not necessary to have sophisticated or lavish equipment, vehicles or staff to run an efficient and worthwhile flying squad service. In spite of limited facilities and many difficulties, our squad is playing a vital role in reducing maternal mortality. I would like to pay particular tribute and credit to the nursing staff of the maternity unit of this hospital without whose dedication and skill it would be impossible to run this service.

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References

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