

ORGANISING A FLYING SQUAD

(An Emergency Domiciliary Obstetric Unit)

by

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A comprehensive hospital maternity service has been evolved in England, but in addition, the presence of about 200 Flying Squad units, from a solitary one in 1935, is itself a proof of necessity of such an organisation in any country's maternity services. Most obstetricians are familiar with the tragedy of a mother arriving dead in a maternity hospital, when her life could have been saved, had skilled help been taken to her home.

As long as there is domiciliary midwifery being practised, the Flying Squad can play a vital role in reducing maternal mortality, which would otherwise be inevitable in domiciliary practice. In a country like India, where hospital maternity services are grossly inadequate and where most deliveries are conducted at the patient's home or in a not-well-equipped maternity home, Flying Squads can certainly save some lives.

When an obstetric emergency arises in such places, the patient is gravely ill and not in a fit condition to be transferred to a hospital, sufficient

medical aid cannot possibly be given on the spot by the attending general practitioner or even an obstetrician, unless some obstetric equipment is immediately available. The Flying Squad aims to provide such an aid on the spot in cases where the nature of emergency does not allow the transfer of the patient to a nearby hospital.

Flying Squad is not a recent idea. In U.S.A. Joseph DeLee, of Chicago, started the first Flying Squad towards the end of the last century. In 1929, Dr. Farquhar Murray read a paper before Edinburgh Obstetric Society advocating the necessity of such an organisation. The first Flying Squad team, operated in Lanarkshire, by Dr. H. J. Thomson of Bellshill, was officially inaugurated by Dr. Farquhar Murray in 1935. Stabler, in 1947, published a paper giving the experiences of this Flying Squad.

In England, with the introduction of the National Health Service in 1947 providing a nation-wide maternity service, it seemed that Flying Squads would no longer be needed. But that was not the case. A more efficient maternity service aimed at perfection and this gave birth to nearly 200 Flying Squads. It has been estimated in England that 1% of all domiciliary confinements need the help of a Flying Squad. It is worth noting that in England all cases for domiciliary con-

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finements do receive ante-natal care, and only where no abnormality is detected and there is no reason for fear, are they permitted to confine at home. In an unscreened maternity practice, as in India, the need for Flying Squads would be very much greater. Where the hospitals are even few miles away from the dying patient, the distance between life and death could only be shortened by providing aid on the spot.

India needs thousands of such Flying Squads. The problem of providing adequate maternity care to every pregnant woman is immense. But some start has to be made and the first Flying Squad has now got to be organised to study the relevant problem in terms of available medical resources. It may not be possible to save lives hundreds of miles away from hospitals at present, but it can certainly save a few lives within a possible reach of Flying Squad, even with the present insufficient scatter of the hospitals.

With this objective in mind I intend to summarise my experience of running a Flying Squad, at Bury and Rossendale Group of Hospitals, in England where I personally attended 60 calls, while supervising the rest.

Structure of a Flying Squad

A Flying Squad essentially consists of a team of doctors and nurses, trained in obstetrics, along with certain equipment for resuscitation and operative procedure in the patient's home. It is also essential to have an efficient communication system between persons who form a Flying Squad team in emergency, but work separately in normal routine and a

means of transport effective in all road and weather conditions.

Following arrangement is generally practised in most Flying Squads in England and we followed the same pattern:

Personnel

A senior obstetric resident, anaesthetist, a junior house surgeon, a labour ward sister and a laboratory technician, should be on duty all day and night to attend to Flying Squad calls, in addition to their normal duties.

Equipment

1. *Resuscitation Box.* A big wooden box about 28" x 20" x 9" size having five compartments:

Compartment No. 1. Sphygmomanometer, stethoscope, masks, apron, arm splint, adhesive tape, crepe and cotton bandages, cotton wool, scissors, blood and urine sample bottles, torch, nail brush, soap, mackintosh, towel, laboratory forms, kidney tray, Martin's Pump to give intravenous fluids under pressure, artery forceps — 6" long steel nails — or hook.

Compartment No. 2. Containing autoclaved venesection set.

Compartment No. 3. Sterile transfusion sets.

Compartment No. 4. Assorted sterile syringes and needles.

Compartment No. 5. Containing ampoules of emergency drugs i.e. analgesics, analeptics, vasopressors, pre-anesthetic medication, oxytocics, etc.

2. *Obstetric Box.* Wooden box similar to the previous one, contain-

ing equipment for obstetric procedure:

Compartment No. 1. Sterile packet of obstetric forceps, instruments for episiotomy and its repair.

Compartment No. 2. Sterile syringes — and needles.

Compartment No. 3. Containing antiseptics and general anesthetic agents.

Compartment No. 4. Equipment for incubation for anesthesia.

3. *A Sterile Drum.* Containing surgical linen gloves, catheters etc.

4. *Infusion Fluid Carrier.* A steel wire crate to carry 8 bottles of plasma and its substitutes.

5. *Blood Bottles Carrier.* An insulated wooden box with three compartments. Central compartment for ice and the other two for bottles of 'O' Rhesus negative blood — one on each side.

6. *Transfusion Stand.* Collapsible — either kept separate or preferably clipped to outside of case No. 1.

7. *Oxygen Cylinder with Stand.*

8. *Portable Anesthetic Machine.*

Contents of both wooden cases should be typed according to the compartment in which they are kept. This list should be fixed on the inside of the lid for ready reference. On return to the hospital, their contents should be checked and necessary replacements made.

Working of Squad

The presence of a Flying Squad unit and the telephone number is made known to all general practitioners, maternity hospitals of the area, ambulance services and district midwives by a circular or press advertisement. They are requested to

utilise the services whenever need arises.

A call is received from a general practitioner or an attending midwife. The telephonist gives priority to such calls. She notes down the address and then transfers the call to registrar on duty. He collects essential information of patient's condition. In the meantime telephonist calls for an area ambulance and informs labour ward sister on duty, anesthetist and laboratory technician. The technician is summoned to the hospital where he waits for further instructions.

Flying Squad leaves the hospital in about 5-10 minutes in ambulance. Before leaving hospital registrar leaves the details of the case with the telephonist who intimates the consultant with the details of the case.

Clinical Problems

Following clinical problems were dealt with by the Flying Squad in Bury and Rossendale Group of Hospitals between the years 1960 to 1963.

Eighty-six Flying Squad calls were attended during these four years.

<i>Nature of Emergency</i>	<i>No. of Calls</i>
<i>I. Haemorrhage</i>	
(1) Post-partum haemorrhage with retained placenta	26
(2) Post-partum haemorrhage after delivery of placenta	22
(3) Secondary post-partum haemorrhage	9
(4) Haemorrhage following abortion	15
(5) Abruptio placentae 1, placenta previa 1	2

(6) Severe dysfunctional uterine haemorrhage	1
II. Request for forceps deliveries	6
III. Other cases: Twins, epilepsy, Breech, Prolapsed cord	5
	86

Sixty-two patients out of these 86 were transferred to hospital for further care, after initial treatment and resuscitation; 24 cases were so satisfactorily managed at home that no necessity was seen to transfer them to the hospital. They were left under the care of patients' own doctor or midwife.

Squad at Work

It is obvious that a vast majority of these calls were for haemorrhage after delivery or abortion.

After arrival at the patient's house no time was wasted in examination of the patient. The sight of the patient was usually a good indication of her general condition. Exact assignment of work to each member of the team for resuscitation avoided any delay or waste of time.

The immediate management essentially consisted of following procedures:

Quick general assessment of the patient by a registrar, raising the foot end of the bed, giving oxygen, collecting samples of blood and sending it to hospital for grouping, matching and setting an intravenous (preferably venesection) drip. It was found necessary to pump blood on numerous occasions. Blood transfusion with

'O' Rh negative blood without previous matching or cross-matching was the first line of attacking imminent death. After initial use of two pints of 'O' Rh negative blood, plasma, dextrose, saline or plasma substitutes were poured into the veins to bring blood pressure near normal levels. We had often used 4-6 pints of plasma and dextrose in addition to 2 pints of 'O' Rh negative blood to raise the blood pressure, before properly matched blood arrived.

After improving the general condition of the patient a reassessment of the patient's condition was done and patient examined in detail. The treatment aiming to stop haemorrhage was carried out according to the cause.

Manual removal of placenta was carried out under general anesthesia in 26 cases. The legs of the patient were held as in lithotomy position by the assistants, while operator either sits on the floor or by the side of the bed.

In cases of abortion, products of conception would be found lying in the cervical canal in most cases, and could be easily removed digitally or with the help of speculum and sponge-holding forceps. For this procedure left lateral position was found very convenient.

For forceps delivery the patient is laid across the bed and legs are held in lithotomy position by the assistant. Forceps is better done under pudendal block anesthesia.

It should be an irrevocable principle that no shocked patient is ever transferred to a hospital. She should be fully resuscitated at home and when her blood pressure remains near nor-

mal she can be transferred with intravenous transfusion in progress.

Modifications

All that was done in England may not be possible in India. Local conditions would demand certain changes and improvisations. Few suggestions are here made; of course more will be learned from experience.

Consultant obstetrician and resident staff of an existing obstetric department of any hospital can organise such a Squad.

Where roads are not good a Jeep can be used instead of an ambulance or a taxi.

If blood is not easily available for some reasons, it should not preclude or delay a Flying Squad team in attending an emergency call. Other intravenous infusion fluids could easily tide over the emergency and these should be used. One should not forget that Flying Squad was started long before blood banks were established and lives were saved with glucose or saline.

Summary

An attempt has been made to em-

phasise the need of an emergency Flying Squad unit as a part of Hospital Obstetric Service, in a country like India where most deliveries are done at home.

Author's experience of conducting a Flying Squad in England is described and details of organising a Flying Squad are given.

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