

CURRENT COMMENT AND CASE REPORTS

CURRENT COMMENT is a section in ANESTHESIOLOGY in which will appear invited and unsolicited professional and scientific correspondence, abbreviated reports of interesting cases, material of interest to anesthesiologists reprinted from varied sources, brief descriptions of apparatus and appliances, technical suggestions, and short citations of experiences with drugs and methods in anesthesiology. Contributions are urgently solicited. Editorial discretion is reserved in selecting and preparing those published. The author's name or initials will appear with all items included.

REPAIR OF DIAPHRAGMATIC HERNIA IN AN INFANT: REPORT OF A CASE

This case is reported, not as an example of a new anesthetic technic, but to describe a method of improvisation which it is hoped may be helpful to anesthetists.

A 5-day old male infant was flown to this hospital from a station in the midwest with a diagnosis of a diaphragmatic hernia on the left side. The infant was in considerable respiratory distress and oxygen was needed at all times. Upon the infant's arrival here, the diagnosis was confirmed by roentgen examination and the decision made to attempt surgical relief of the condition immediately.

The child was an apparently normal newborn in all respects except for this anatomical abnormality. Respirations were exceedingly rapid, ranging from 100 to 120 per minute, and if the child were removed from the oxygen hood for even a short period (thirty seconds), respirations became more labored and the color dusky and cyanotic.

The surgeon, pediatrician and anesthetist consulted together regarding the surgical procedure to be done, and the type of anesthesia needed. It was decided that an abdominal approach would be made and the best anesthetic technic to follow would be some means of administration with a positive pressure technic.

Ether was the anesthetic agent of choice. The equipment at hand was a small open mask, an infant-size metal oral pharyngeal airway, a rubber infant-size mask from a Kreiselman resuscitator, a socket elbow, a short corrugated tube section, a Peterson ether drop cup, and for a breathing bag,

a toy red rubber balloon which inflated without distention to about 200 cc. capacity. Equipment was not available to incorporate a soda lime canister into the system, so it was decided to use a semi-open technic, removing the mask at frequent intervals to blow off the carbon dioxide at the sacrifice of a continuous positive pressure system.

Induction was accomplished by the open drop method and then the closed system with the equipment described was instituted, oxygen being furnished from a mid-get Heidbrink machine. Slight rapid manual pressure was applied to the breathing bag from the start of the operation. The surgical procedure was started in the lower first plane of anesthesia and this plane was maintained more or less evenly throughout the entire operative procedure. The rubber mask was applied manually to fit the contours of the tiny face, and it was removed frequently, as already stated. The abdomen was opened through a left perimedial incision. The abdominal organs were removed from the left thoracic cavity and the defect in the diaphragm repaired. Almost immediately after their removal, the respiratory rate dropped to about 60 per minute and the infant breathed easier than it had at any time since arrival at the hospital. The diaphragm was repaired and positive pressure was maintained intermittently throughout that phase of the procedure, the respirations rising occasionally to 100 per minute.

An attempt was then made to replace the bulging loops of bowel into the small

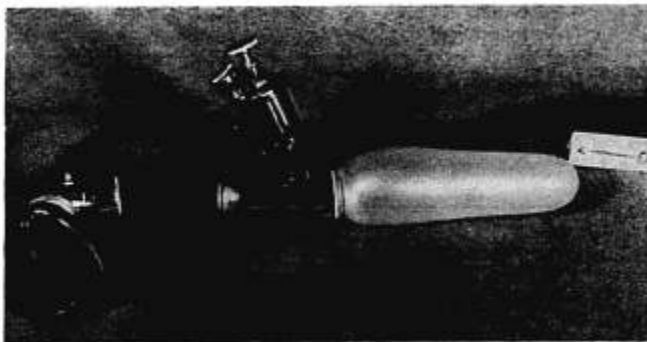


FIG. 1.

abdominal cavity and approximate the wound edges in anatomical layers. Even before the peritoneum was halfway closed, respiration ceased and the infant became somewhat cyanotic. Manual pressure on the loops of gut was immediately released and the intestine allowed to lie freely in the open wound. Within a minute and a half to two minutes of supported respiration, the child started to breath rapidly voluntarily and the color returned to a good, healthy pink. Respiration was supported for several more minutes and then the operation continued. This time, no attempt was made to close in anatomical layers, but the skin and subcutaneous layers were undercut and approximated im-

mediately over the contents of the abdominal cavity.

The operative procedure lasted approximately two hours and during this time, two toy rubber balloons were broken in the first hour as a result of raw ether coming in contact with the rubber. Since these were the only two available, they were replaced with rubber condoms (an article used in this operating room for head dressings). These were used for the breathing bag until the end of the operation.

At the end of operation, the infant was in fairly good condition; respirations were about 60 per minute and seemed fairly easy. The child's color was good but the



FIG. 2.

child was returned immediately to the oxygen hood.

The following day, the condition of the patient was very satisfactory. Respirations were reduced to about 40 per minute and were regular and without effort. A roentgenogram of the chest showed complete expansion and aeration of the left lung. The infant was kept in the oxygen hood for several days following the surgical procedure and then removed completely. Small feedings were started slowly.

The child was discharged from the hospital to await a period of growth until such time as repair of the abdominal defect is deemed advisable. The left lung now shows only a small area of atelectasis at the apex.

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SUBSTITUTE NASOPHARYNGEAL AIRWAY

To reduce the incidence of epistaxis in patients when using manufactured nasopharyngeal airways and to effect economy

owing to continuous losses, an economical and satisfactory substitute was developed by this department. The materials used

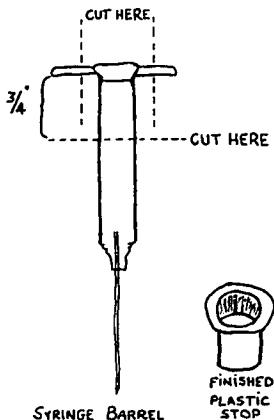


FIG. 1.