LOOKING BACK: 100 YEARS AGO

Prolonged Cessation of Respiration—Recovery—Case Report

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Complete cessation of natural respiration for 1 hour and 20 minutes with recovery is of very infrequent occurrence…

CASE

G.S., Hospital No. 9794, a white male, aged 45, laborer, an Armenian, was admitted to the Milwaukee County Hospital July 3, 1911, complaining of pain in the stomach and over the lower dorsal spines, vomiting and obstinate constipation. On entrance he appeared considerably emaciated and very weak, requiring support while walking a few rods from the ambulance to the wards. His pulse was 88, regular, of small volume, temperature 98.6 F°, respirations 20. The following history was obtained through an interpreter: The patient's family and personal history are uneventful. Present complaint: this began 6 months ago with pain the epigastrium and left hypochondrium and later in the back over the 7th to 10th dorsal vertebrae. This pain is of a gnawing character and is most pronounced 1 or 2 hours after eating. The taking of food or of soda relieves the pain. He has had persistent vomiting since the onset of trouble. The vomiting occurs a few hours after his meals, usually after dinner and supper. The vomitus was never bloody or fecal in character. His bowels are obstinately constipated. Cathartics have no effect while enemas expel a few small, thin stools. Urination is not frequent or painful. He has lost a good deal in weight but does not know the amount; also he has become very weak and unable to move about. He has no headache, cough, or sweats.

EXAMINATION

Outside of the marked degree of emaciation the head, neck, and thorax were negative. The abdomen was retracted, the belly wall devoid of fat, and the liver dullness normal. The lower border of the stomach extended 4 fingers below the umbilicus upon inflation with air. No definite tumor mass was palpable at the pylorus nor in any other part of the abdomen except a probable enlargement of the belly wall by light tapping with the tips of the fingers peristaltic waves travelling from left to right were elicited. There were no hernia at the inguinal rings; and the inguinal glands were palpable. The genitals and extremities were negative.

Gastric contents: A stomach tube was easily passed into the stomach and 1200 cc of a brownish yellow material of a strong garlicky odor was removed. Analysis of the contents showed free HC l.12%, total acidity 23, blood negative with guaiac and benzidene tests. The next day the stomach tube was again introduced and about 1 litre of a similar smelling material obtained.

Although no tumor mass was palpable, it was evident that the dilatation of the stomach and the retention of food was due to a stricture of the pylorus. The patient was then transferred to the surgical wards for a gastrjejunostomy. Before being taken to the operating room, he was given subcutaneously strychnine sulphate gr. 1/30, and morphine gr. ¼ and atropine sulphate gr. 1/150.

OPERATION

Dr Tisdale, surgeon; ether anesthesia employed. A median line incision from the ensiform process to the umbilicus was made. The stomach was exposed and the pylorus was found to be contracted to the size of a lead pencil. No tumor mass was palpable. A probable gland enlargement was palpable behind the peritoneum. The first part of the jejunum was pushed through a vessel-free area in the mesocolon and brought in apposition with the posterior aspect of the stomach. Clamps were applied, and the first line of sutures begun when the patient’s respiration...
ceased. The facial and radial pulse became barely palpable. The administration of ether was stopped and a subcutaneous injection of strychnine sulphate gr. 1/30 immediately given. After a few futile attempts to promote respiration by intermittent firm pressure against the ribs, the exposed organs were replaced into the abdomen and the wound well protected with sterile towels. The head of the patient was lowered over the end of the table, the tongue drawn forwards, the fauces cleared, and artificial respiration begun. Sylvester’s method was employed. The arms were grasped at the wrists and drawn upwards above the patient’s head so as to expand the chest through the action of the pectoralis major muscles. This position was maintained a couple of seconds and then the arms were lowered to the side and pressed firmly against the ribs to produce a forcible expiratory act. The arms were then again elevated and the same cycle repeated and kept up at about 15 times per minute, the normal rate of respiration. Thus, for 1 hour and 20 minutes artificial respiration was continued until the first signs of natural respirations were noted. In the interim, 3 doses of strychnine gr. 1/30 and lastly atropine sulphate gr. 1/100 were injected subcutaneously, intervals of about 20 minutes lapsing between the injections. During the period of respiratory failure, the patient did not even make a gasp while the heart sounds remained fairly regular, of medium volume, and about normal in rate, the strychnine no doubt influencing the heart center. As the patient as was in a very precarious condition it was not deemed advisable to continue the operation, so the abdominal incision was closed with a few interrupted silkworm sutures.

The patient was quickly returned to his bed and the treatment for surgical shock instituted. The respirations continued slow and irregular. During the next 12 hours, they registered between 7 and 12 per minute. The next day they varied from 12 to 16 per minute and were still somewhat irregular. Heart stimulants were given every 3 hours. The patient was now put on nutrient enemas. After 1 week, he was in a sufficiently good condition to warrant the completion of the operation, for it was essential to do a gastrojejunostomy and thus give the patient a better opportunity to recover.

Operation concluded: As the patient was not a very good surgical risk, no general anesthetic was used. A subcutaneous injection of morphine sulphate gr. ¼ and atropine gr. 1/100 was given prior to the operation. The wound was reopened and an anastomosis between the stomach and jejunum made. In attempting to sew up the peritoneum the patient experienced so much pain, although gr. 1/8 and gr ¼ doses or morphine had been added, that the abdominal incision was merely closed with interrupted silkworm sutures notwithstanding the possibility of subsequent ventral hernia.

The respirations once more became exceedingly slow and for the next few hours averaged about 6 per minute. However, they gradually increased so that by the next day there were normal in rate and character. The patient now began to improve rapidly. His appetite became voracious and he continually requested more to eat although he was getting more food than the average healthy patient in the ward receives. His weight increased 18 lbs during the first month after the operation.

The only sequela resulting from prolonged artificial respiration was a partial paralysis of the left deltoid muscle causing partial limitation of motion at the left shoulder joint. It is surprising that only a paralysis of such small extent followed. At the time of writing, 2 months after the operation the patients is in very good condition. He walks about and does light work in the ward. His weight is 139 lbs, a gain of 27 lbs since his admission to the hospital. His temperature, pulse, and respirations are normal, red blood cells 5,600,000 per c.cm., white blood cells 7,600, hemoglobin 82, and his blood pressure is 128m.m. Hg. His appetite is still voracious and his bowels act daily; he occasionally has recourse to cathartics. He has recovered the use of the deltoid muscle which had remained paralyzed for 6 weeks. A well formed scar marks the line of incision in the abdomen.

SUMMARY

This case illustrates a few very interesting points. In the first place, to the writer’s knowledge it is the first case of its kind recorded. Again, it upholds Dr. J. F. Mitchell’s contention (JAMA, Aug 26, 1911) that there is a distinct contrast in the sensibility of the parietal and visceral peritoneum, a subject first worked out and published by Lennander. The parietal peritoneum is intensely sensitive to pain while the visceral peritoneum and the abdominal organs are not sensitive to pain. It was noted in the case report that during the manipulations within the abdomen the patient remained perfectly quiet. However, when an attempt was made to sew up the parietal peritoneum, the patient experienced such intense pain although 2 more doses of morphine were given, that the abdominal incision was simply closed with a few interrupted silkworm sutures. Finally, this case teaches that hope for recovery should never be given up as long as the heart beats; and that one should not be guided by any specified time allotted in such cases by some surgeons.
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