A CASE OF RESPIRATORY PARALYSIS UNDER ANÆSTHESIA, DUE TO CEREBELLAR ABSCESS

BY

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In these days of mechanical respirators it is a mere commonplace for artificial respiration to be carried out for long and indefinite periods. The following case of prolonged manual artificial respiration which occurred more than five years ago, in the “pre-iron lung” era, is, therefore, I submit, of some—if merely historic—interest.

A girl of eleven years of age was admitted to the Ear, Nose and Throat Department of the Middlesex Hospital on the 22nd December, 1933. There was a history of left ear-ache and discharge of one month’s duration, and, more recently, of increasing weakness, vomiting and vertigo.

Examination. The child was rather drowsy but lay in bed without complaining. The head was turned to the right but could be turned to the left without discomfort. There was no neck rigidity. There was a coarse nystagmus on looking to the left only. The left pupil was larger than the right but there was no papilloedema. The whole of the left side was more flaccid than the right. The left fingers were hyper-extended when the arms were held out. The left hand fell away when both were extended. There was ataxia with the left hand in the finger-nose test but the past-pointing was negative. The biceps and supinator reflexes in the left arm were diminished and the triceps jerk was not obtainable. Knee and ankle jerks, equal. Plantar
responses were both flexor. There was marked dysdiado-
kinesia of the left arm. Temperature 97.2; pulse 92.

Operation. The next morning, under a gas-ether induction
maintained by ether and oxygen through a Shipway's appar-
atus, a left Schwartz mastoidectomy was performed. Some
granulations were found in the antrum and in some cells, but
there was no definite pus. The lateral sinus and dura of the
middle fossa were exposed and found to be normal. The dura
of the posterior fossa in front of the sinus was similarly found
to be normal. There were no mastoid cells behind the sinus, and
the dura was not exposed. Dura in Trautmann's triangle incised
but nil abnormal found. The cerebellum was not explored. The
wound was left open and packed with gauze.

Subsequent Progress. On the 24th and 25th December the
temperature remained at 97.5 and the condition in statu quo.
The wound was dressed and the gauze plug changed under gas.
On the 26th the patient was not so well. She was drowsy and
the pulse was down to 80 in the evening. On the 27th the patient
seemed a little better but she had a headache and the pulse was
now 76.

The patient was, as on other days, given gas in her bed at
about 6 p.m. for the gauze packing to be removed. As this
manoeuvre was almost completed her respiration failed quite
suddenly in full inspiration. There was no cyanosis. The face
was very pale. The pulse was very rapid and thin. As there had
been no obstruction to breathing it was at once recognised that
these signs pointed to a central respiratory paralysis. Artificial
respiration was begun whilst a mixture of 95 parts oxygen (O₃)
and five parts carbon dioxide (CO₂) was administered through
a face-piece. Respiration was resumed in a few minutes at about
two minutes to the minute. After about seven minutes respiration failed
again. In the belief that the condition was due to a medullary
"cone " this interval had been utilised by sending for a lumbar
puncture tray. A lumbar puncture was performed and 38 c.c.
of saline injected into the spinal canal. Respiration was re-
instituted but very slowly and only for about ten minutes. A
further intrathecal injection of 20 c.c. had no effect. All this
time artificial respiration was continued with the addition of the
O₂CO₂ mixture. The pulse was now very rapid and thin; a
vein in the left arm was opened to relieve the congestion and the
strain on the right heart, but very little bleeding occurred and no
benefit was observed. With a pair of bone forceps bone was removed from behind the sinus. An emissary vein was injured during this procedure which led to some difficulty. A needle was inserted with the idea of relieving the intrathecal tension. Pus escaped through the needle, about 10 c.c. in all. In the meantime the theatre staff had been warned as to what was occurring and instruments were being boiled.

At this stage, therefore, it was seen that further exploration was necessary, so the patient was moved in her bed to the theatre, artificial respiration and the administration of O₂CO₂ being maintained in the lift and along the corridors. In the theatre more bone was removed posterior to the sinus and the latter was divided between ligatures. Much difficulty was experienced in controlling the lower end, and the patient lost a considerable amount of blood. The abscess was opened and about 1½ ounces of pus escaped. Respiration commenced most dramatically within fifteen seconds of incising the abscess and soon became regular though still slightly slow. At the moment of incision the dilated pupils contracted and the globes moved. Tone in the limbs, which had been flaccid since respiration first failed, also returned within a matter of seconds.

The hemorrhage was stopped, a small tube was inserted into the abscess cavity and 100 c.c. saline was given intravenously. Patient was returned to bed, the feet were raised and heat was applied. Patient was now breathing normally and, though not conscious, resented having her throat swabbed out. Artificial respiration had been carried out for forty-five minutes during the greater part of which time respiration was entirely suspended.

At 8 p.m. the patient seemed a little better and moved her eyes when addressed by name.

At 10 p.m. the condition was the same, the pulse being 160 and respirations 180.

At 12 p.m. the patient died.

Post-mortem. There was a left cerebellar abscess with a fairly thick wall. The path of infection was not demonstrable. There was oedema of the lungs and early broncho-pneumonia. My grateful thanks are due to Mr. C. P. Wilson and Mr. J. P. Monkhouse for their permission to publish this case.

Summary. Central respiratory paralysis occurred during nitrous-oxide anaesthesia being given for the purpose of chang-
ing the gauze packing of the fourth day after a Schwartz
mastoidectomy. Despite the intrathecal injection of saline to
combat a possible medullary "cone", normal respiration was
not resumed until the cerebellum was exposed and incised, 1\(\frac{1}{2}\)
onces of pus escaping. Artificial respiration and the admini-
stration of an O\(_2\)CO\(_2\) mixture was continued throughout the
forty-five minutes which elapsed.

Patient died eight hours later.

Post-mortem. Left cerebellar abscess, pulmonary œdema,
early broncho-pneumonia.