The first anaesthetic

In my opinion, 16 October 2006 marks the 160th anniversary of the most important day in the whole long history of surgery. Yet it commemorates not some outstanding surgical discovery but merely the removal of a benign lump in the neck. However, on this occasion it marked the watershed between the agonies of the knife – the screaming and struggling patient being held down by muscular assistants – and the comparative calm of the modern operating theatre. It was the first public demonstration of general anaesthesia.

The hero of the day was a 27-year-old dentist in Boston, William Morton, who had just begun to experiment with ether for dental extractions. His first patient, Eben Frost, had a tooth extracted painlessly on 30 September 1846, after inhaling from an ether-soaked handkerchief. Over the next couple of weeks, Morton progressed to devising a simple machine which comprised a two-necked glass globe; one neck allowed inflow of air, the other was fitted with a wooden mouthpiece, through which the patient inhaled the air across an ether-soaked sponge in the bottom of the jar.

Hearing of these experiments, the Professor of Surgery at the Massachusetts General Hospital, John Collins Warren, one of the country's leading surgeons, invited Morton to give a public demonstration on 16 October (*Figure 1*). The operating theatre was situated just below the central dome of the building – it is preserved as a lecture theatre, the 'ether dome', to this day.

Figure 1. The first operation under anaesthesia. John Warren operates while William Morton anaesthetizes.

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On that morning it was crowded with surgeons and medical students, anxious to watch the experiment. The patient was 20-year-old Gilbert Abbott, who had a benign lump on the side of his neck. Petrified at the thought of the pain of the operation, he consented to be the guinea pig, and his name has passed into history. Morton got his patient to inhale through the apparatus and soon said to Warren 'your patient is ready, doctor'. The patient lay silent while Warren spent 30 minutes removing the lump. At the end, Abbott stated that the whole affair had been painless. It took a few moments for the audience to realize what an important event they had witnessed, then they rushed forward to congratulate Morton, to examine Abbott and to convince themselves that the operation had really been painless.

But it was now essential to proceed to the crucial experiment. The agent might be all very well for relatively minor surgery or for dental extractions, but would it work, and would it be safe, in capital operations – amputation?

This was scheduled for 7 November. The patient was a servant girl, Alice Mohan, aged 21 years, who had been in the hospital since the previous March with tuberculosis of the knee. An above-knee amputation was to be performed by the house surgeon, George Hayward, assisted by Warren and HJ Bigelow, son of the great Jacob Bigelow. Morton administered the ether and, after some coughing, Alice fell asleep. Hayward stuck a pin into her arm and, when there was no reaction, rapidly amputated the leg. As he finished, Alice began to move and groan. Howard bent over her and said 'I guess you have been asleep, Alice'. 'I guess I have', said the patient. 'Well, you know why we brought you here, are you ready?' 'Yes, I am ready'. Hayward then reached down, picked up the amputated leg and showed it to her, saying 'It's all done, Alice'. (What Alice said at this point is not recorded!)

The patient did well and was discharged home in time for Christmas.

News of 'the most glorious, nay, the most God-like discovery of this or any other age', as the Boston newspaper described it, spread as fast as the railway trains could carry the reports all over the USA and that package boats could deliver the news to Europe and to the Antipodes.

Jacob Bigelow wrote a letter, dated 28 November, to his American friend, Dr Francis Boott, enclosing the account of the operations and of Morton's apparatus. Boott, in turn, conveyed the news to Robert Liston, Professor of Surgery at University College Hospital. Liston got young William Squire to get hold of some ether and to build a facsimile of Morton's device.

On 19 December, Squire gave ether for a dental extraction on Boott's niece and, a couple of days later, the first capital operation in England under anaesthesia was performed at University College Hospital. The patient was a butler, Frederick Churchill, who had been admitted a month earlier with chronic osteomyelitis of the tibia.

At two o'clock on the afternoon of 21 December the operating theatre was packed with surgeons and medical students. Robert Liston turned to the audience and said 'We are going to try a Yankee dodge today, gentlemen, for making men insensible'. Churchill was brought in, two strong students stood by to hold him down if the experiment failed. William Squire put the tube into the patient's mouth and gripped his nose. After some gurgling he said 'I think he will do, Sir'. 'Time me, gentlemen'. The limb was amputated, and dropped into the sawdust. 'Twenty eight seconds' said Squire. The vessels were tied, the stump was dressed, and the patient then said 'When are you going to begin? Take me back. I can't have it done'. He was shown the bandaged stump, wept a little and the porters carried him back to bed – 5 minutes had elapsed since he left it.

Liston, usually icy calm in theatre, turned to the audience and said 'This Yankee dodge, gentlemen, beats mesmerism hollow!'.

As for Morton, the rest of his short life was not a happy one, although he had the satisfaction of using ether with great success during the American Civil War. He died in 1868, aged only 48 years. **BJHM**

Figure 1 *is reproduced courtesy of the Massachusetts General Hospital.*