Brief Historical Note on Battle’s Sign
Breve Nota Histórica do Sinal de Battle

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ABSTRACT
William Henry Battle (1855-1936) was a remarkable physician, who is most remembered for his “sign” (post-auricular ecchymosis indicating a fracture of the base of the skull). However, there were many of his contributions to the medical knowledge. This paper aims to describe his brief history, emphasizing on the Battle’s sign.

Keywords: Battle’s sign; William Henry Battle; History note; Bibliography; Skull base fracture

INTRODUCTION
William Henry Battle was born on February 23, 1855, in Lincoln of Lincolnshire, England1. Son of the mayor John Richard Lincolnshire, he was one of nine children1. When he was twenty-two year-old, Battle earned his medical degree from St. Thomas’s Medical School, in London, and became a Fellow of the Royal College of Surgeons three years later, in 1880. He was also a member of the British Medical Association, where he acted as an honorary secretary. Battle was not only a surgeon at St. Thomas’s Hospital, but also affiliated to the Royal Free Hospital2. From 1881 to 1885, he edited the St. Thomas’s Surgical Reports. In 1888, the doctor became an assistant surgeon at East London Hospital for Children. For
the next two years he was a Hunterian Professor in Surgery and Pathology at the Royal College of Surgeons. Battle also taught in the Medical School for Women, holding the position of Demonstrator in Practical Surgery.

Battle was the first to report a laparotomy procedure aiming to relieve intestinal obstruction due to postoperative adhesions. He also described what would later become the “Battle's incision” – a vertical incision of the abdominal wall with medial, temporary retraction of the rectus abdominis muscle for appendectomies, in 1895. Six years later he described the “Battle's operation” – a surgery for femoral hernia repair.

In 1907, the surgeon wrote an article on traumatic rupture of the intestines to the Edinburgh Medical Journal and in 1910 he lectured on intra-abdominal injuries to the Medical Society of London.

With the advent of World War I, Battle was commissioned into the Royal Army Medical Corps and served first as major and then as lieutenant colonel, working on the 3rd and on the 5th London General Hospitals.

In 1911, alongside Mr. Edred Corner, a surgeon at Great Ormond Street Hospital for Sick Children, Battle published “Clinical Lectures on the Acute Abdomen”. Together, the physicians also wrote “The Surgery of the Diseases of the Appendix Vermiformis and Their Complications”. Regarding appendicitis, Battle strongly believed that the high incidence of such condition in the early 1900s resulted from the high use of steel-rolled flour in America.

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Mr. Hewett had stated that a skull base fracture should be suspected when facing bleeding and skin discoloration over the mastoid, especially if this area had not suffered any direct trauma. Battle decided to reproduce such findings, thoroughly describing the involved anatomy. In order to do so, he conducted post mortem examinations that consisted of injecting the occipital musculature and observing for fluid (water, Berlin blue, and glycerin) spread into adjacent tissues. The experiment revealed that blood moved from the suboccipital region to superficial tissues, a process that took three to fourteen days.

Battle's sign
Battle's first description of his sign was about a 41-year-old male who had injured his head after falling. The patient was unconscious upon admission to the hospital and presented with both rhinorrhagia and otorrhagia. After four days, the physician observed an ecchymosis behind his left ear, accompanied by otorrhoea.

When describing his signal, Battle stated that the bleeding started in front of the mastoid process apex, afterwards...
spreading over the mastoid itself. Later, a line of blood alongside the external ear would be formed. Given the clinical examination, he thought of the ecchymosis as a paramount mark of skull base fracture. Battle additionally expressed his concerns about the localization of the sign, claiming that it could be often overlooked once the ears and the hair tended to conceal it⁶,⁷.

For over 20 years, Battle was on the editorial staff of the Lancet³. He died on the second day of February, 1936, at the age of 81 years⁵.

In his obituary, printed in the British Medical Journal on February 15, 1936, doctors praised Battle’s achievements, highlighting that the physician was very devoted to his duty and that his teaching methods were simple and clear – what made him popular among the students⁵,⁷. Until these days, it is safe to say that Battle’s discoveries and ideas are still relevant not only for neurosurgeons, but for all the medical community.

Despite of Battle’s varied contributions to medicine, he is nowadays primarily remembered for his description of ecchymosis over the mastoid, the so called “Battle’s Sign”, which remains a strong indicator of skull base fracture⁵.

REFERENCES


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