

Short Communication

Did Sir Charles Bell have a Right Facial Palsy? A Facial and Literature Analysis

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- Historical analysis

Abstract

Life and genius of Sir Charles Bell are remarkable. His studies are beyond the understanding of his times. Physician, scientist and a human being of extreme sensibility are some of the characteristics that had made an indelible mark in the history of medicine. His clinical work was made with passion and care for the suffering of the others. He is well known in the occidental world for the description of the Second Motoneuron Idiopathic Facial Palsy (IFP) of the Facial Nerve (VII). But also is assumed that Bell himself suffered a right facial palsy. This supposition leads us to make an analysis of the face of Sir Charles Bell in to different times. We also support our results with a literature review of the clinical case of Sir Charles Bell's Palsy.

"...When the paralysis was complete, I began to feel pain in the temple, and there was oedematous swelling in the part. During the course of this complaint I have experienced two circumstances which may lead to the detection of the facial nerve becoming affected..."

- Sir Charles Bell - (Sic)

ABBREVIATIONS

IFP: Idiopathic Facial Palsy; VII: Facial Nerve

INTRODUCTION

Sir Charles Bell KH FRS FRSE FRCSE MWS was born in Doun near Edinburgh; November 1774 and dies in North Hallow, Worcestershire; 28 April 1842. Son of the Rev William Bell, a clergyman of the Episcopal Church of Scotland, who died in 1779 when Bell was a small child. He was the last child of Tree boys. His three older brothers included John Bell (1763–1820), also surgeon; and the advocate George Joseph Bell (1770–1843) [1].

This great Scottish artist, anatomist, surgeon, physiologist and theologian. Studied anatomy and physiology in Edinburgh, where he took his medical degree in 1798. He conducted his surgical training as assistant to his elder brother John Bell. John was a noted surgeon and writer. He is noted for discovering the difference between sensory nerves and motor nerves in the spinal cord. He made several drawings. Remarkable are the several drawings of the human expression. He also drew the long thoracic nerve or Bell's nerve for the first time. In the literature he published some interesting reflexions about soul and human emotions [2].

In his scientific career Sir Charles Bell made several remarkable descriptions like: Bell's phenomenon, Bell's Law and Bell's palsy [1,3]. It is a fact that Bell described the second motoneuron IFP but in the literature and in the colloquial discourse there is a supposition that the description of Bell's palsy was made by the self report of symptoms that Bell himself may suffer. This supposition is well extended and published in several papers. There are some literatures that accept that Bell suffered a mild IFP [4-6]. The current paper analyses the possibility of a mild IFP suffered by Bell on the right side of his face.

MATERIALS AND METHODS

Sir Charles Bell is supposed to have suffered a mild Second Motoneuron Idiopathic Facial Palsy (IFP) on the right side of the face [4-6]. We proceed with 2 analyses:

Facial analysis of the face of Sir Charles Bell: Trough House-Brackmann classification by 3 different ENT surgeons (JLVC, HRLA and JNO) [7]. The analysis of the face of Sir Charles Bell was made by analysis of portraits in the young age and in the elderly age (Figure 1A, B). The analysis was double blind and the results were summarized by LRR. The portraits were given with a longitudinal line drawn in the middle of the face and 6 horizontal lines. Named A, B, C, D, E and F. Line A crosses the face through

the hair line; Line B a cross the eyebrows; Line C a cross the pupils, line D at the level of the inferior border of the lobule of the nose; Line E a cross the union of the superior and inferior lip; Line F a cross the inferior border of the chin.

Literature Review of the Clinical Case of Sir Charles Bell: We perform a PubMed, Embase and Hinari search of articles with the corresponding booleans operators: Charles AND Bell AND facial AND palsy. The main author perform the search. HRLA, JNO and EAC read the articles and made a resume of the facial status of Sir Charles Bell according to the House-Brackmann classification.

RESULTS AND DISCUSSION

The Face analysis: After a careful analysis of the portraits by the 3 ENT surgeon. We have this conclusions. It reveals that No Palsy was assigned by 2 surgeons and only a House-Brackmann grade 2 on the left side of the face in elder age was assigned by one surgeon. This surgeon assigned the left side palsy due to less marked nasolabial fold depth and a low displaced palpebral fissure both on the left side of the face.

The literature review: This leads us to obtain 24 references.



Figure 1 (A) Sir Charles Bell by John Stevensoil on canvas, circa 1821 1/8 in. x 39 5/8 in. (1273 mm x 1013 mm) given by the sitter's widow, 1876. National Portrait Gallery, London at young age and Sir Charles Bell at elder age (B).

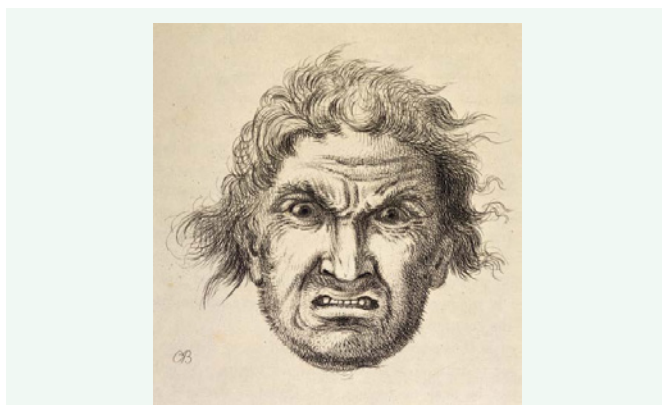


Figure 2 Sir Charles Bell drawing in *Essays on The Anatomy and Philosophy of Expression*. 1824.

After careful reading of this articles and books we only obtain 3 references that explains the case of the supposed right second motoneuron IFP suffered by Bell [4-6].

The most important clues comes from van de Graafwork. He published two papers about Bells palsy [8,9]. In his works recalls the quotation:

"...When the paralysis was complete, I began to feel pain in the temple, and there was oedematous swelling in the part. During the course of this complaint I have experienced two circumstances which may lead to the detection of the facial nerve becoming affected...". This quotation is falsely assumed to be written by Bell. This quotations is authored by Professor Pierre Paul Émile Roux.

Roux himself suffered a Bell's palsy at the same time Bell was describing the second motoneuron IFP. This false quotation and a carefully analysis of Bell's biography by Gordon [1] supports that Bell's description of IFP was made on the basis of description of few cases. So the previous almost famous quotation is true but was written in a letter by Professor Roux of Paris to his colleague Descot, in which he described his own symptoms [8].

CONCLUSION

Bell's description of second motoneuron IFP was based on Bell's exquisite clinical records of few patients. He supposed that VII nerve was a motor only nerve. This thought was related to his personal believes of natural theology (Figure 2) [2]. He supposed that VII nerve was similar to an anterior branch of the spinal nerve roots and that this contains only motor fibers [1].

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