

Sir Robert Carswell (1793-1857): coining the term “melanoma”

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Summary

Melanoma is a neoplastic disorder produced by malignant transformation of the normal melanocyte, accounting for 4% of all skin malignancies. This malignancy was described since antiquity as a “fatal black tumour”. In the 19th century, the distinguished pathologist Sir Robert Car-

swell coined first the term melanoma, provided its pathological description and depicted the lesion in his famous work Pathological Anatomy: Illustrations of the elementary forms of disease.

Key words: melanoma, Robert Carswell, pathology, pathological drawings

Introduction

Melanoma is a neoplastic disorder produced by malignant transformation of the normal melanocyte. Actually, 91.2% of melanomas are cutaneous, 5.5% are ocular, 1.3% are mucosal and 2.2% are of unknown primary site. Cutaneous melanoma accounts of 4% of all skin malignancies but it causes the greatest number of skin-related deaths worldwide [1].

The incidence of melanoma in the Inca mummies is paradoxical, in view of the infrequency of melanoma in dark-skinned individuals. However, in the 1960s signs of malignant melanoma were described involving the skull and long bones in the fossilized remains of the pre-Columbian Incas of Peru [2].

In the 5th century BC, Hippocrates (460-377 BC) described a similar cutaneous lesion. In the 17th century, several physicians as Nathanael Highmore (1613-1685), Caspar Bartholin (1655-1738) and Théophile Bonet (1620-1689) referred to the disease as “fatal black tumour” [3].

In 1787, John Hunter (1728-1793) published the first clinical description of melanoma. The patient was a 35-year-old man presenting with lymph nodes metastasis of the lower mandible [4].

Years later, the French physician René Laënnec (1781-1826), in his article entitled *Sur les Mélanoses*, recognized the disease as a distinct clinical entity and

proposed the term mélanose arising from the Greek word melas meaning “black” [5].

In 1820, William Norris (1792-1877), physician in Stourbridge, England, was the first to link melanoma with heredity as he mentioned the case of a family that its members had multiple nevi and some of them developed metastatic melanoma [6].

However the term *melanoma* was introduced in the medical terminology by the Scottish pathologist Sir Robert Carswell (1793-1857) (photo).

Carswell’s life and career

Robert Carswell was born in Paisley, Scotland, on February 3rd 1793 and he studied medicine in the University of Glasgow. During his studies he showed a particular interest in anatomical drawing. James Jeffray (1759-1848), Professor of Anatomy and Physiology, encouraged him to draw anatomical preparation and the eminent surgeon and pathologist James Thomson (1765-1864) employed him to make a collection of pathological drawings [7].

In 1822, Carswell decided to pursue his studies in Lyon and Paris and spent a year to make drawings in autopsy rooms. In 1826, he received his MD degree from the University of Glasgow and returned to France to complete his studies in drawing [8].

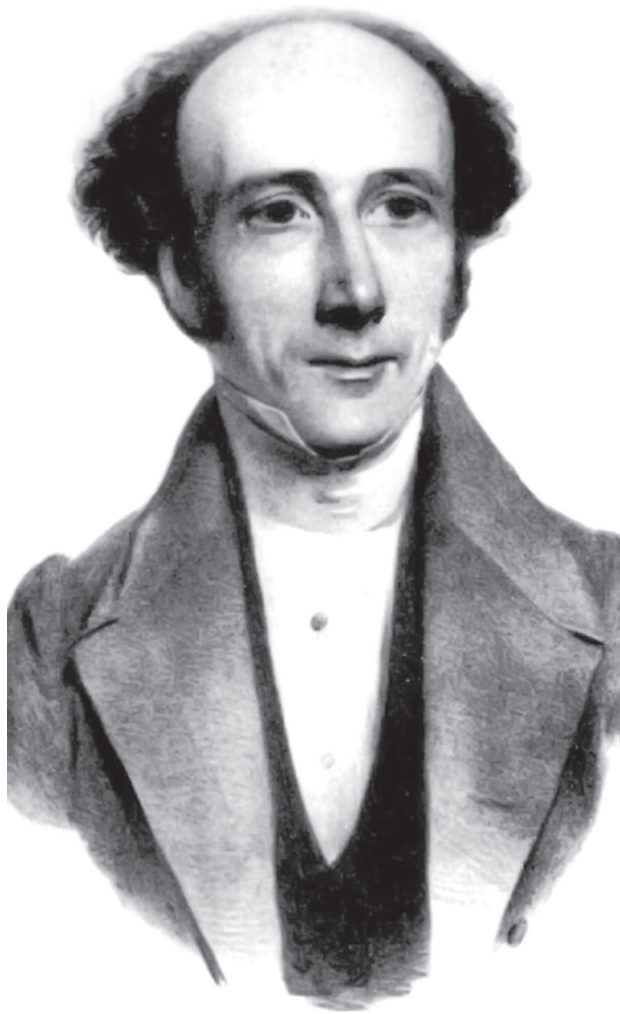


Photo 1. The distinguished pathologist Sir Robert Carswell (1793-1857).

In 1828, Carswell was appointed Professor of Pathological Anatomy at the University College of London and he was commissioned by the council to make a collection of pathological anatomy drawings for their museum. Pursuing this object, he remained in France till 1831, attending the lectures of the pathologist and founder of Medical Statistics Pierre-Charles-Alexandre Louis (1787-1872) and completing his Atlas of drawings [8].

His work entitled *Pathological Anatomy: Illustrations of the elementary forms of disease* was published in 1838 comprising more than 2000 water-color anatomical drawings [7].

Returning in London, he undertook his duties in the University and worked also as a private physician. However, Carswell suffered from respiratory problems and in 1840 decided to resign from his post and moved to Belgium as he believed that the air would be cleaner than the smog and fog of London. In Belgium, he was appointed Physician of the King Leopold I (1790-1865)

and he devoted also a certain time of his day to care the poor citizens of Lacken. In 1850 he was married Marguerite Chardenot [9].

For his services to the King of France Louis-Philippe (1773-1850) while he was in exile in England, Robert Carswell was knighted by Queen Victoria (1819-1901).

He died on June 15, 1857 in Belgium after complications of chronic respiratory disease [7].

Coining the term *melanoma*

In his work *Pathological Anatomy*, Robert Carswell gives first the term *melanoma* to designate this pigmented malignant tumour, depicts the lesion and provides its pathological description.

Defining the lesion he states: “It is a morbid product, presenting a black color of various degrees of intensity, somewhat humid, opaque, possessing the consistence and homogeneous aspect of the tissue of the bronchial glands of the adult, described by Laennec under the appellation *melanosis*. Various and different morbid products have since been described by several pathologists and even some post-mortem lesions have been confounded with this disease. . . . Therefore, I include under the title of *melanoma* all melanotic formations, black discolorations or products described by Laennec and other authors, I shall however, in order to mark in a more special manner the difference of their nature, separate them in two groups” [10]. And at this point Carswell provides the pathological classification of melanoma as he divides the lesions in *true melanosis* and *spurious melanosis*.

Analyzing these entities he mentions that: “True melanosis consists in the formation of a morbid product of secretion of a deep brown or black color of various degrees of intensity, unorganized, the form and consistence of which present considerable variety solely in consequence of the influence of external agents. True melanosis occurs under four varieties of form: punctiform, tuberiform, stratiform, liquiform” [10].

As for *spurious melanosis*, he states that occurs only in the lungs. “Both lungs present one uniform black carbonaceous color affecting nearly all tissues of these organs” [10].

He also cites the case of a 70-year-old man, suffering from a cutaneous melanoma. The patient was admitted at Hôtel-Dieu hospital in Paris with general paralysis and died soon after in a “state of collapse and profound stupor”. The autopsy revealed metastases in the brain and ileum, depicted in a remarkable way by Carswell [10] (Figure 1).

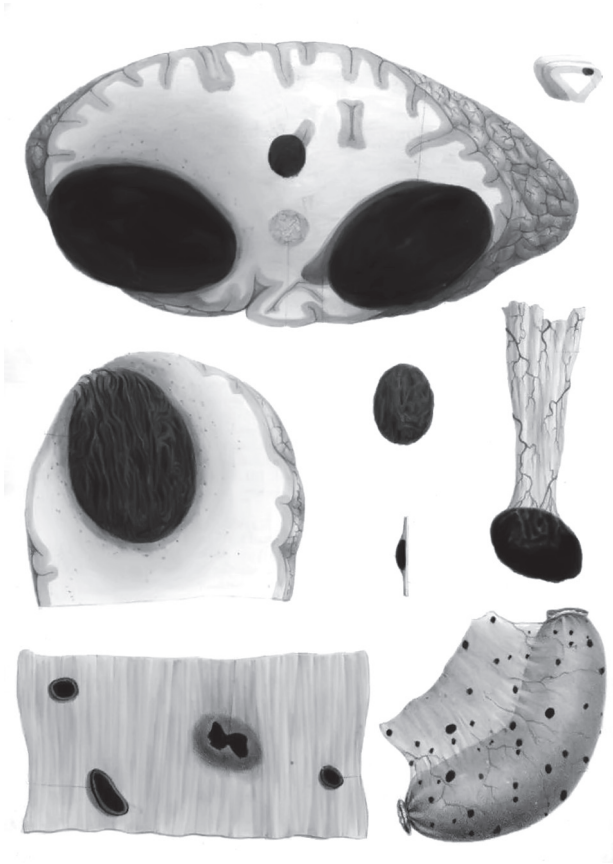


Figure 1. Melanoma metastasis in brain, ileum and omentum depicted by Sir Robert Carswell.

Conclusion

Robert Carswell was a prominent pathologist. Perhaps no anatomist was so great artist like him. Referring to his Atlas, Sir William Osler (1849-1919) states:

“The matter represents the highest point which the science of morbid anatomy had reached before the introduction of the microscope” [8]. His research on melanoma contributed enormously to the further study of this disease.

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