

HISTORY OF ONCOLOGY

Heart cancer in the writings of the anatomo-clinical School members

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Summary

In the 19th century medicine flourished in Paris thanks to the advent of the anatomo-clinical School which introduced new methods of clinical examination and diagnosis. Pathology, auscultation and percussion became a routine in medical practice and paved the way for the rising of specialties such as cardiology and oncology. Heart cancer cases were

meticulously described by several physicians and by the end of the century heart carcinoma was a well studied and known entity.

Key words: history of oncology, Gabriel Andral, Gaspard Laurent Bayle, heart cancer

Introduction

Nowadays, it sounds quite ironic the passage from the famous *Encyclopedia* of Denis Diderot (1713-1784) that “heart diseases are extremely rare” [1]! However, at the beginning of 18th century, the advent of pathology and clinical medicine contributed to the recognition of heart disease as a distinct entity and the work of Raymond Vieussens (1641-1715), Giovanni-Maria Lancisi (1654-1720) and Jean-Baptiste de Sénac (1693-1770) illuminated heart and its functions, summarized and described meticulously the cardiovascular anatomy and pathology, provided the first scientific classification of heart diseases and recognized valvular pathologies such as aortic regurgitation, mitral calcification, and mitral regurgitation [2]. Despite

all these contributions, clinical cardiology at the 18th century remained basic and the majority of heart diseases were recognized post-mortem. The missing piece in the puzzle of clinical medicine, the correlation between clinical and anatomical lesions, became reality thanks to the rising of the anatomo-clinical School which flourished in Paris in 19th century [3]. The innovative group of physicians headed by the founder of modern cardiology, Baron Jean-Nicolas Corvisart (1755-1821), the founder of histology Xavier Bichat (1771-1802), the founder of modern pathological anatomy and author of the first treatise on cancer Gaspard Laurent Bayle (1774-1816) and the inventor of stethoscope René-Théophile-Hyacinthe Laennec (1781-1826),

introduced in daily medical practice new methods of clinical examination and diagnosis including auscultation, percussion and pathological examination. Thus a new era began in the diagnosis of the nature of diseases with certainty and *intra vitam* - during patient's lifetime [4-6]. Heart, the "free form disease" organ of the 18th century, became the high mortality organ while new pathologies emerged in medical bibliography such as heart cancer.

Cancer of the heart in 19th century French medical literature

In hospital wards and autopsy rooms, physicians of the anatomico-clinical School recognized a new heart pathology, the cancer and even if it was considered very rare, they observed various forms and distinguished it histologically in scirrhus, encephaloid and tuberculous. It seems that cancer of the heart was first described by Carcassonne in 1777 in a patient who presented intense chest pain, palpitations, intermittent pulse, orthopnoea and syncope but the accuracy of diagnosis is debated as the patient was suffering from syphilis [7]. Few years later the physician and professor of general pathology in Medical School of Paris Gabriel Andral (1797-1876) and Gaspard Laurent Bayle provided the earliest records on heart cancer (Figure 1). Bayle reported a case of scirrhus cancer which affected the two auricles and the interventricular septum [8] while Andral mentioned two cases of encephaloid cancer of the heart. In the first case a 56-year old male patient was presented with symptoms of left ventricular hypertrophy [9]. During dissection Andral found lesions of hypertrophy but he also noticed that the walls of the right ventricle and auricle were converted into a hard yellowish-white substance resembling encephaloid tumour. In the second case, the patient was 37 years old and according to Andral: "he had enjoyed good health until two years previously, when he became slightly asthmatic; in this state he continued for five or six months, when he was suddenly seized one morning after breakfast with the most excruciating pain, at first confined to the region of the heart, but soon extending over the whole left side of the thorax. At the same time, his dyspnoea increased, and he had violent palpitations and vomiting; after an hour the pain abated, and the next day he was as usual. During the following year his difficulty of breathing gradually increased, and he had seven or eight returns of the same pain, which he compared to that of violent tooth-ache. At the time of his admission into La Charité, he was considerably emaciated, his face had a peculiar sallow tinge, and



Figure 1. Gabriel Andral (1797-1876). Professor of general pathology in Medical School of Paris and historian of medicine Gabriel Andral (1797-1876).

every evening there was a slight accession of fever. During the first month after his admission he had repeated attacks of violent pain of short continuance. He had occasionally violent palpitations, but in the interval between those attacks there was no stethoscopic evidence of disease either in the heart or lungs. He lingered out a few weeks longer, became oedematous, and died suddenly without any struggle [9]. During autopsy Andral noticed that the external wall of the right ventricle was occupied by a large knotted tumour, extending from its apex to its base, which projected so far externally as to lead him to mistake it for a supernumerary heart. When he dissected the tumour he found it he was composed of encephaloid tissue [9]. In 1813, P. Rullier (-1837) presented to the Society of the Faculty of Medicine of Paris the case of a 35 years old man who died after a supposed attack of peripneumonia, presenting intense pain in the left side of the chest, painful abdomen, especially on the right side, and oedema of the extremities. During physical examination an abdominal mass was palpated, however, on dissection, lungs were normal but heart was voluminous and its cavities enlarged. The presence of a scirrhus, carcinomatous mass was noticed, forming irregular prominences which were extended from the internal to the external part of the organ. Furthermore, a large carcinomatous tumour was found in the mesentery as well as in the intestine [10,11]. Professor Joseph-Claude-Anthelme Récamier (1774-1852), who introduced

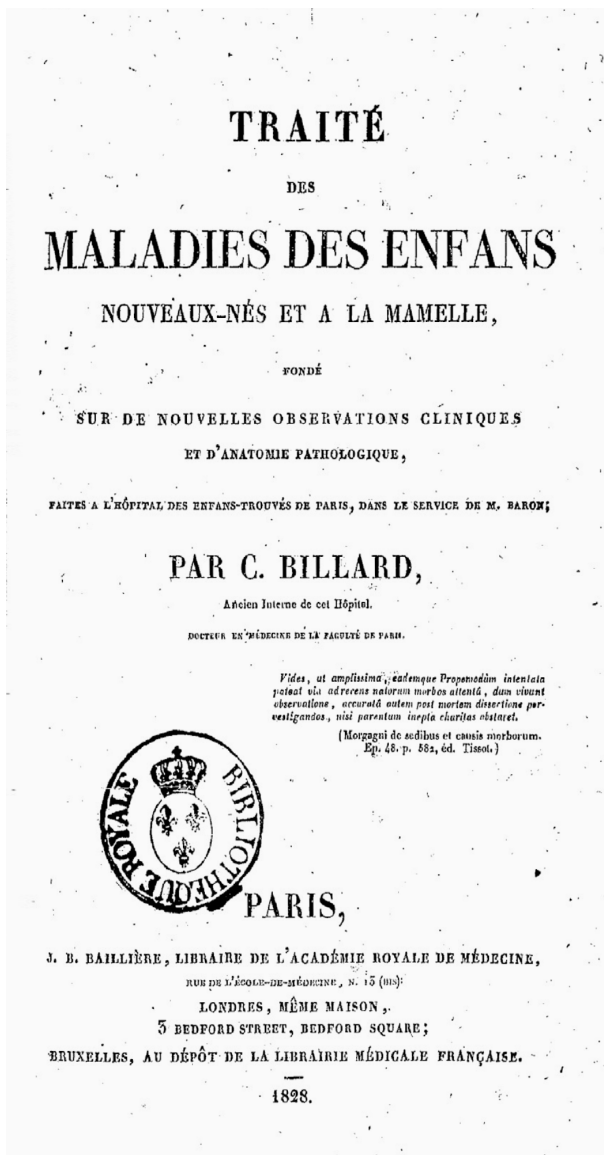


Figure 2. Frontispiece of Billard's treatise; the paediatrician who described first the rare fetal cardiac tumour.

the term “metastasis”, described that during autopsy he found a heart that was transformed, in a certain part of its extent, into a squirrhous matter like the “skin of bacon” whereas lungs were also affected with cancerous masses [12]. Laennec, remembering the case of Recamier, mentioned in his book that he recognized during autopsy two cases of encephaloid cancer of the heart. In the first case, small cancerous masses, the largest of which had the volume of a hazel, were formed in the ventricles while in the second case, a thick deposition of masses was found along the coronary vessels, between the serous pericardium and the heart itself. He furthermore concluded that: “cancerous productions may be developed in the heart, as in other organs, under two principal forms: that of isolated tumours and that of interstitial deposition which last constitutes what is commonly termed trans-

formation of the organ into a cancerous substance” [13]. In his turn, professor Jean Baptiste Bouillaud (1796-1881) described three cases of cancer of the heart and pericardium among which the case of a 45 years old female who presented symptoms of chronic peritonitis six months before her death. At the autopsy the peritoneal cavity contained “a considerable amount of serum, in which were floating flocculi of lymph”. The liver, mesenteric glands and omentum were also involved. Heart was atrophied and contained two cancerous tumours, one in the wall of the left ventricle and the other on the right [14]. Jean Cruveilhier (1791-1874), a leading figure in pathology, in his “Traité d'anatomie pathologique générale” observed during autopsy in an old man, an organic lesion of the heart, having the characteristics of cancer as it consisted of cancerous masses of tuberculous form located on the heart surface [15]. In 1823, the military physician Charles Prosper Ollivier d'Angers (1796-1845) described the case of a 46 years old woman who died after an apoplexy attack at Salpêtrière hospital. Her symptomatology, before death, was not particular to that of a heart disease. Nevertheless, during autopsy, the inferior half of the muscular wall of the left ventricle had the appearance of a yellowish-white medullary tissue, a particular aspect of encephaloid tumours [16]. Two years later, the surgeon Alfred Armand Velpeau (1795-1867) in his essay “Exposition d'un cas remarquable de maladie cancéreuse” (Exposition of a remarkable case of cancerous disease) remarked a heart which contained cancerous masses of different sizes, the size not exceeding the size of a pigeon's egg [17]. Finally the first description of the rare fetal cardiac tumour was provided in 1828 by the paediatrician Charles Michel Billard (1800-1832) in his manuscript entitled: “Traité des maladies des enfants nouveau-nés” (Treatise of newborn childrens' diseases). Billard stated that during the autopsy of a 3-day-old newborn, he found three masses in the wall of the heart [18] (Figure 2).

Conclusion

Several French physicians, members of the Parisian anatomico-clinical School, recognized heart cancer and, even if some of their descriptions are questioned for the accuracy in diagnosis, they paved the way for the study and diagnosis of heart tumours. In the following decades, distinguished physicians such as Lewy Lebert (1813-1878), Sir John Russell Reynolds (1828-1896) and Rudolph Virchow (1821-1902) reported several cases of heart cancer [19] while Thomas Beville Peacock (1812-1882) provided the first classification of

heart cancer: “primary cancer of the heart; heart affected in conjunction with other and especially with adjacent organs such as lungs, pleurae, mediastinal and bronchial glands; cancer spreading to the heart by contiguity from mediastinal, cervical and bronchial glands; and cancer of the heart secondary to that of some other organ i.e: lips, breast,

abdominal organs, uterus and vagina, penis and testicles”. At the end of 19th century heart cancer was an established entity in medical literature, making the pioneer in the study of cancer Walter Hayle Walshe (1812–1892) to state: “cancer of the heart is not so excessively uncommon as is generally imagined” [21].

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