The beginnings of thoracic surgery in Poland – a resection of an enormous tumor of the clavicle in Gdańsk in 1730

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Abstract

We present the case of a 27-year-old patient with an enormous tumor of the clavicle, who, in 1730, was referred to Ludolf Remmers, a famous Gdańsk surgeon. After clinical evaluation and further consultation with fellow surgeons, Remmers decided to remove the lesion surgically. A detailed description of the procedure and its post-operative period survived to this day, owing to the personal account of Paul Heinrich Moehring, who was present at the surgery. Moehring, a young German physician, botanist, and ornithologist, commenced his medical and anatomical studies in 1729 at the Academic Gymnasium in Gdańsk, Poland. The surgery was the subject of his publicly defended dissertation as part of the final examination, concluding his medical education in Gdańsk.

Key words: history of medicine, clavicular tumor.

Streszczenie

W artykule przedstawiono historię choreby pacjenta, który w 1730 roku zgłosił się do gdańskiego chirurga Ludolfa Remmersa z ogromnym guzem obojczyka. Po badaniu i konsultacji z innymi chirurgami Remmers podjął decyzję o przeprowadzeniu operacji. Jej dokładny opis i przebieg okresu pooperacyjnego znany jest dzięki rozprawie będącej swoistą dokumentacją choroby. Autorem rozprawy jest Paul Heinrich Moehring, niemiecki lekarz, botanik i ornitolog, który w 1729 r. rozpoczął studia anatomiczno-medyczne w Gdańsku, kończącym jego gdańską edukację.

Słowa kluczowe: historia medycyny, guz obojczyka.
2, 1731, to conclude his medical studies, he presented this case report as the public defense of his diploma in anatomy and surgery, written under personal supervision of Kulmus (Fig. 1) [4].

Case description

In June 1730, a 27-year-old man, Jan Lampeke, visited Ludolf Remmers (1696-1777), a famous Gdańsk surgeon, complaining of an outgrowth on the left side of his chest. Its rapid enlargement was causing such severe pain that the unfortunate man was no longer able to work. The tumor was clearly visible through his clothes, and was notably protruding. Upon palpation, the tumor was found not only to be extremely large, but also remarkably hard. The patient could not pinpoint the origins of the lesion; he recalled, however, that in his childhood, he had suffered a high fall. Soon after that episode, his arm started hurting, and later the patient noticed the presence of a tumor. Three years before Lampeke met Remmers, the tumor had been growing at its highest rate. Ludolf Remmers consulted two fellow surgeons, who also examined the patient. They found that the tumor adhered to the thorax and had an uneven rounded shape with a wide base. The lesion was located in the upper left side of the chest, extending towards the neck. The tumor appeared to be amalgamated with the rest of the body, while protruding at least “the length of a man’s fist, long like a foot and four thumbs wide”. The lesion was rather immobile and hard upon palpation. At its margins, a number of blood vessels were visible, some of them finger-thick.

After scrupulous examination, a decision was undertaken to perform a surgical resection of the lesion with prior meticulous preparation of the patient. 400 years ago, surgeons were already aware that, due to the rich and complex vascular network present in the subclavicular region, tumor removal would not be easy. Concurrently, the surgeons expressed their opinion that the tumor might be an adipoma, atheroma, or a cyst [4].

Pre-operative patient preparation and course of the surgery

The patient was informed of the planned surgery and all possible complications and threats related to it. Despite the risks, due to the terrible suffering caused by the location and the weight of the lesion, the patient consented to the proposed procedure. Taking into account the patient’s severe undernourishment and fatigue, the physicians provided him with clinical nutritional treatment for a period of six weeks, together with some unspecified medication for blood detoxification and purging, which were administered alternately, as part of the pre-operative preparation.

The surgery was planned to be performed by Ludolf Remmers in the morning of September 9, 1730. All equipment necessary for amputation was prepared, namely: scalpels, hooks, needles, silk threads, antiseptic medications, including “a powder made from a fresh hoof, volatile flour, herbs with an antiseptic liquid made from oil of vitriol mixed with vinegar” [see the Appendix for the Latin descriptions of these medications], as well as bands and bandages. The surgery was performed in the presence of local physicians and surgeons. A few students of the Academic Gymnasium, including Moehring, could also participate in the event. The patient was seated on a chair and strapped to it tightly around his arms and abdomen. Medical students kept his head still during the entire procedure to ensure that he would not move during surgery, which could plausibly jeopardize the success of the operation.

After two initial incisions of the skin above the tumor, performed with an intermediate scalpel (8 fingers wide and 1.5 fingers thick), skin folds were separated from the tumor sac. All large blood vessels in the area were also identified and ligated to prevent excessive bleeding from the wound. The surgeons were afraid that blood loss might be life-threatening to the patient due to his poor general condition and severe malnutrition.

The tumor was finally detached from the skin and pectoral muscles. Remmers noted, however, that the tumor was fixed tightly to the area adjacent to the clavicle. The physician could not detach the tumor at this site, which was at least one thumb wide and appeared to be osseous in nature. Neither a sharp scalpel, nor the surgeon’s physical strength could overcome the force with which the lesion was fused with the bone. Even with the help of the two fellow surgeons, he did not succeed in removing the tumor. All sharp scalpels were broken in the numerous failed at-

Fig. 1. Title page of PH. Moehring’s dissertation
tempts. It became evident that the base of the tumor was completely osseous and amalgamated with the clavicle, and, to remove it, the surgeons would need to saw it.

Because of the lack of necessary surgical tools, Remmers was forced to postpone the operation. He disinfected the wound using antiseptic medications of that period (see above) and closed up all the previously uncovered and incised elements, including the pectoral muscles and the outer part of the tumor; finally, he covered the lesion with clean bands and bandages. The patient was very happy not to require any assistance when he was asked to move to a bed. Cardiac drugs and psychostimulants were administered alternately; however, no further information regarding their chemical composition was offered by Moehring in his dissertation.

In the afternoon, the surgery could be resumed. At first, the patient did not want to proceed with the amputation, as he was complaining of fatigue and mild dyspnea. Contrarily, no distressing signs or symptoms were noted on physical examination; the patient’s pulse was regular, and body temperature was normal. Remmers insisted on resuming the indispensable surgical treatment as soon as possible. Eventually, the patient gave consent and the surgeons could recommence. The osseous base of the tumor was found, which allowed the surgeons to detach the tumor and conclude the operation. After the amputation, the patient, presenting no sign of dyspnea, admitted that he was previously lying about being drowsy, because he was afraid of the inevitable suffering and pain that he believed would have been caused by the torture of his body being sawed without any anesthesia. It turned out, however, that the discomfort related to the bone being sawed, just as that caused previously by the resection of the muscular tissues, was within acceptable limits. During the entire surgical treatment, performed both during the morning and the afternoon, the patient did not lose consciousness, and there was only minor bleeding from the wound [4].

**Macroscopic description of the tumor**

The weight of the tumor was nearly 5 pounds (1,600 g). The fragment adjacent to the clavicle was particularly hard, while the remaining parts were partially osseous, partially cartilaginous, with some yellowish adipose tissue and bright-red fragments [4]. Based on the reported description, it can be deduced that the lesion was in fact an osteo-cartilaginous exostosis formed at the site of an incorrectly healed fracture (Fig. 2).

**Post-operative period**

The patient required medical assistance for a period of 22 days. Its detailed description can also be found in Moehring’s dissertation. Immediately after the surgery, when the patient was still fastened to the chair, psychostimulants were administered in line with the common practice of that period. Their exact chemical composition remains unknown; however, hallucinogens were most probably among the important components of the medication in order to keep the patient at ease in the first post-operative hours. Accordingly, the first night passed without any complaint from Jan Lampeke. The important data concerning the patient’s post-operative condition and wound healing are presented in Table I.

**Discussion**

The surgical treatment, the equipment used during the operation, as well as the pre- and post-operative management of the presented case were consistent with the indications and recommendations of respected contemporary authors in the field, proving the excellence and advancement of medical education provided at the Academic Gymnasium in Gdańsk.

The presented case, even if most spectacular, is not the only achievement of Gdańsk surgeons of that period. Apart from trivial procedures such as dressing wounds or treating fractures and dislocations, they performed a number of complicated operations, including trepanations and tumor resections. In 1788, an amputation of a breast tumor was carried out. In fact, tumor resections were already being performed in Gdańsk in the 17th century; for instance, Daniel Krohn (1698) performed the surgical removal of a bulky face lesion on a 20-year-old man, after which the wounds healed successfully within 13 days. Slightly ear-

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**Fig. 2.** Images of the lesion in the pre- and post-operative period
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lier, in the years 1671-1672, another Gdańsk surgeon, Christopher Lorentz, accomplished several resections of tumors, including a back lesion in a female patient and a cheek tumor in a young male patient [5].

The excellence in surgical management demonstrated by Gdańsk surgeons developed not only through practical professional experience, but also from the instruction gained from easily available and exceptionally numerous manuscripts available on site. These included all major medical works and compendia: medieval scripts, printed handbooks and anatomical atlases, as well as the most important publications of the 18th century. In addition to the book collection (including ca. 1300 manuscripts) of the Gdańsk Library, a public institution established in 1596, a number of volumes could be easily obtained from private collections of Gdańsk physicians and surgeons [6, 7].

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References
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