CAROTID ARTERY COMPRESSION AS EMPLOYED BOTH IN THE PAST AND IN THE PRESENT

J. E. WEBSTER, M.D., AND E. S. GURDJIAN, M.D.*

Wayne State University, Department of Neurosurgery, Grace and Detroit Memorial Hospitals, Detroit, Michigan

(Received for publication June 10, 1937)

The term carotid is derived from a Greek word (σάπος) meaning sleep or stupor, suggesting a function for an artery which has been known for many centuries. Most of the observations made in antiquity have resulted from ligation of the artery rather than from temporary compression. At the time of Galen\(^3\) it was believed that the effect from compression was caused by “compression of the sensitive nerves which lie near the arteries.” The Persian, Avicenna\(^4\) (980–1037), stated that when the carotid arteries were ligated sense and motion were lost. If the carotid arteries were temporarily obstructed, Valverdus\(^5\) noted early that we immediately grow stupid and fall asleep—“he saw this experiment made by Columbus at Pisa in the year 1554, on a young man, in a large circle of gentlemen, equally to their terror and to the amusement of the operators, who persuaded them that it was done by the force of incantation.”

Many experiments through past centuries were then made upon ligation of the carotid arteries in several species of animals. The results were contradictory and confusing. In 1845 Norman Chevers\(^6\) reviewed the history of the effects of carotid ligation in animals and man up to that period. Clinical observations were correlated with pathological findings and his conclusions conformed essentially with modern views. He referred to carotid compression only in a brief footnote. Chevers stated that Dr. Caleb Parry\(^6\) practised compression of the carotid arteries in patients having mania, headache, vertigo, convulsions, and hysterical complaints. Others also used this method, including a Dr. Allier\(^1\) in 1837 who believed it to be efficacious in some cases of epilepsy. Allier had compressed both carotid arteries simultaneously in a case of hydrophobia at the beginning of a convulsive paroxysm. “In an instant the convulsions ceased, and the patient fell into a kind of fainting fit. Alarmed at this, the family refused to allow the doctor the methodical employment of this powerful treatment.” Chevers pointed out that regardless of the therapeutic use such compression was put to, it proved that “obstruction of these vessels has a powerful effect upon the brain, and that in compressing the arteries, there is not produced sufficient impediment in the internal jugular veins to occasion dangerous cerebral congestion.”

Hart\(^1\) stated that Professor T. Vanzetti\(^2\) of Padua claimed priority as inventor of digital compression. Vanzetti insisted upon the value of digital

* Aided by the Kresge Foundation.
CAROTID ARTERY COMPRESSION

373

compression; studied its application to the treatment of aneurism and thus claimed the attention of European surgeons. "In July 1856 a female patient came under the care of Professor Gioppi, of Padua, the subject of an aneurism of the ophthalmic artery . . . The pulsating aneurismal tumor could be felt by introducing the finger between the globe of the eye and the roof of the orbit; the bruit could be heard loudly. The carotid was compressed for periods of a minute or two, and, with frequent intervals, by the convalescents of the ward and by the patient herself. Pressure continued for more than a minute produced fainting. Nevertheless, at the end of one day there

was a visible improvement, and at the end of four days all pulsations had ceased. Four months afterwards the eye rested and moved naturally in the orbit." A second case of aneurism of the ophthalmic artery, cured by digital compression, was published in 1858 by Vanzetti. "Intermittent compression of the carotid by the finger was here also employed for five minutes at a time, and cure was effected by seven hours and twenty minutes of compression spread over eighteen days."17

However, an earlier clinical use of carotid compression was described with case reports in 1789 by Parry in a paper read to the Medical Society of London.26 (Figs. 1 and 2). Compression of the carotid artery was to reduce "the too great quantity of blood forced through the carotid arteries into the

---

17 A second case of aneurism of the ophthalmic artery, cured by digital compression, was published in 1858 by Vanzetti. "Intermittent compression of the carotid by the finger was here also employed for five minutes at a time, and cure was effected by seven hours and twenty minutes of compression spread over eighteen days."17

However, an earlier clinical use of carotid compression was described with case reports in 1789 by Parry in a paper read to the Medical Society of London.26 (Figs. 1 and 2). Compression of the carotid artery was to reduce "the too great quantity of blood forced through the carotid arteries into the

---

Fig. 1. Caleb Hillier Parry in 1789 reported upon his experiences in using digital compression of the carotid artery as a method of treatment. He noted that syncope resulted from compression.

Fig. 2. Title page of Parry's paper in the Memoirs of the Medical Society of London.26