PRIMARY THROMBOPHLEBITIS OF THE LEFT SUBCLAVIAN VEIN*

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Only one case of primary thrombophlebitis of the subclavian vein has been found in the records of the Cleveland Clinic.

The patient, an athletic school-boy aged 18 years, sought medical advice because of pain in the left chest. He had been well until about seven weeks before the examination, when, during a game of basketball, he had begun to notice weakness, numbness and blueness of the left hand and arm which extended up to the shoulder. This condition progressed until the entire left upper extremity was swollen and blue, and the veins of the arm, shoulder and upper left portion of the chest "stood out like cords." Examination by the family physician revealed that the blood pressure in the left arm was 30 mm. lower than that in the right arm. During the following two weeks all these symptoms had gradually subsided.

One week before his admission to the Clinic, or six weeks following the onset of the illness, the patient began to experience dull pain in the region of the left chest just below the nipple line. This pain was increased by deep breathing and was so severe at times that codeine was required for relief. The patient lost no weight, and he did not complain of cough, night sweats, fever or other symptoms referable to systemic disease.

The patient was a tall, asthenic youth whose weight was slightly below normal. His temperature was 98.6° F. and his pulse rate was 75. Except for the presence of some palpable anterior cervical glands, and a slightly enlarged thyroid, examination of the head and neck revealed no abnormalities. The apex of the left chest was flattened and there was diminished expansion and some impairment of the percussion note. The left diaphragm showed diminished descent. A friction rub was heard at the base of the left lung in the anterior axillary line, but there was no evidence of the presence of moisture. The heart sounds were within normal limits, and were of good quality without evident murmurs. While the pulse was the same in each arm, the blood pressure was 128 systolic, 78 diastolic in the right arm, and 114 systolic, 74 diastolic in the left. Distention of the veins of the left arm and shoulder and the upper portion of the chest was caused by lifting a chair with that arm. This distension subsided one minute after cessation of the exertion. The arm did not become cyanosed nor could a thrombosed vein be palpated. Pressure in the left upper quadrant of the abdomen aggravated the pain in the chest.

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A roentgenogram of the chest and mediastinum revealed the presence of no abnormality. Urinalysis, blood count, blood sugar and Wassermann and Kahn tests of the blood revealed no significant deviations from the normal. The sedimentation rate was 78 mm. in one hour.

The diagnosis was thrombophlebitis of the left subclavian vein with secondary pulmonary embolism and fibrinous pleurisy. The treatment prescribed was rest until the fever had subsided, and abstinence from participation in athletics for a period of from six to eight weeks. A recent communication from the patient's mother, eight months subsequent to his visit here, states that the patient has enjoyed good health except for a brief attack of pleurisy which occurred during the preceding month. This may have been caused by a secondary embolus.

The unusual features of the case were that the lesion was on the left, instead of on the right side, as in other cases reported in the literature, and that the rare complication of pulmonary embolism was present.

Discussion

Primary thrombosis or thrombophlebitis of the subclavian vein is a relatively rare condition, as may be judged from the small number of cases reported in the literature. The analogous condition in the axillary vein is possibly more common and undoubtedly in some cases, the thrombus occludes both veins. In 1920, Cadenat[1] was able to collect only twenty-seven reported cases of primary thrombosis of the axillary vein, while in 1931, Horton[2] stated that more than fifty cases had been reported in the literature up to that time. Reference to the Quarterly Cumulative Index Medicus for the past few years, impresses one with the fact that the incidence of primary thrombosis in the subclavian vein is less than half as great as that of thrombosis in the axillary vein.

Several terms which are used to describe this condition are primary thrombosis, idiopathic thrombosis and effort thrombosis. Irrespective of the terminology, this diagnosis should be made only in those cases in which there is no other obvious cause for the symptoms, such as the presence of malignant or tuberculous glands.

The etiology of this condition has excited considerable interest, and several theories have been advanced, notably those of Lowenstein,[3] and of Gould and Patey.[4] Trauma and strain usually cannot be excluded as etiologic factors, although there may be no direct evidence of injury of the vein. All theories ascribe the phenomena to venous dilation and stasis which are caused by the effort of expiration combined with injury of the wall of the blood vessel.

This injury is usually caused by pressure from some structure, such as the subclavius muscle, costo-coracoid ligament or the first rib, on the intima of the blood vessel. In nearly all cases, the arm is in the abducted position when the supposed trauma is produced.

Thrombophlebitis of the subclavian vein, although a rare condition presents certain definite characteristic findings. Usually the patient is a healthy male between twenty and thirty years of age who presents himself for examination because of symptoms referable to the right arm.* Almost always there is a history of recent trauma or exceptional effort, while the arm was in the abducted position. The affected arm is uniformly swollen, cyanosed and the superficial veins of the pectoral region and anterolateral chest wall are dilated. In the presence of axillary thrombosis, a firm tender cord is palpable in the region of the vein while in the presence of subclavian thrombosis, no such cord is felt. Usually some pain and tenderness are present, but there is no striking pyrexia or constitutional disturbance. In making a differential diagnosis the following conditions must be considered: intrathoracic tumor, cervical rib or other bony abnormality, enlarged axillary lymph nodes, aneurysm of the arch of the aorta, and, in some instances, cardiac failure. The presence of syphilis and tuberculosis must always be excluded.

The treatment of primary thrombophlebitis is simple and consists of rest followed by massage. The value of ambulatory treatment has been emphasized. The prognosis is uniformly good, although recurrences have been reported.[5] Embolism is a rare complication[6] although it must always be considered as a theoretical danger.

References

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* In the case reported here, the thrombus was on the left. Whether or not the patient was left-handed was not ascertained by the examining physician.