Lodging of an Embolus in a Patent Foramen Ovale

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A 77 year old man developed severe chest pain and collapsed seven days after prostatectomy and died three days later. Necropsy revealed thrombosis of right femoral vein, complete embolic obstruction of the primary branches of the pulmonary artery, and an embolus, 10 cm. long and 0.5 cm. in diameter, lodged in the foramen ovale. Although no systemic arterial emboli were found, it can be readily seen how such emboli could have developed.

THE RELEASE of a venous thrombus into the circulating blood and its paradoxical passage through a patent foramen ovale to produce systemic arterial embolism is a well known clinical and pathologic entity. However, the actual anatomic demonstration of an embolus lodged in a patent foramen ovale is an infrequent observation at autopsies as judged by the finding of only fourteen cases reported in the world’s literature. To illustrate again the intracardiac morphologic basis for paradoxical embolism, the following case is reported.

Fig. 1. The foramen ovale is patent and an embolus is impacted in it.

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CASE REPORT

N. H., a 77 year old Negro man entered Parkland Hospital on August 3, 1948, with a complaint of urinary retention of one week's duration. A diagnosis of benign prostatic hypertrophy was made, and a suprapubic prostatectomy was performed seven days after admission. The patient's postoperative course was uneventful for seven days. On the eighth day after operation the patient suddenly collapsed, "broke out in a cold sweat," and became pulseless. One-half hour later he complained of a "feeling of pressure" in the substernal region that did not radiate. At that time the pulse was 100 per minute and regular and the blood pressure was 100/60. Two hours after the original episode, the patient experienced a second attack of chest pain, this time with radiation down the left arm. He gave no previous history of chest pain, cardiovascular symptoms, or tenderness and swelling of his legs. He expired three days after his original attack of chest pain.

At autopsy the following pertinent observations were made: (1) thrombosis of right femoral vein; (2) embolus, 10 cm. in length and 0.5 cm. in diameter, impacted in the foramen ovale (fig. 1); (3) complete obstruction of the primary branches of the pulmonary artery by emboli; (4) two small, peripheral, wedge-shaped pulmonary infarcts, one in the base of the right and one in the base of the left lung; (5) absence of demonstrable systemic arterial emboli.

The portion of the embolus in the left auricle, which is by definition a paradoxical embolus, could have given rise to systemic arterial emboli, although none were found.

SUMMARY

The pathogenesis of paradoxical embolism is briefly stated, and a case is reported which illustrates the premise of intracardiac linking between venous thrombosis and paradoxical systemic arterial embolism.

REFERENCES

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