Fatal Pulmonary Embolism in a Psychiatric Patient After a Journey by Air

Thanks to modern methods of treatment, pulmonary embolism is no longer the dreaded complication of major surgery that it used to be. Nevertheless it is still responsible for sporadic tragic fatalities, apart from major surgery, and this report concerns one such case. It is published in the hope that it will enable appropriate measures to be taken to avoid similar incidents in the future.

The climatic conditions and the comparatively poor facilities for the treatment of psychiatric illnesses are factors which make it desirable to transfer some patients by air from tropical regions to the United Kingdom as rapidly as possible. The total number of cases is not large, and the patients usually respond favourably to appropriate treatment in the cooler environment of this country. It is to such a patient that I now refer.

CASE REPORT

A woman aged 30, with no previous serious psychiatric illness, was thought to have been very anxious and worried and to have taken sedation for several weeks before the onset of acute symptoms (which occurred at night)—insomnia, confusion, hallucinosis. The day after the onset she was moved to a general hospital. Her physical condition was good, but her temperature was 99.8° F. (37.7° C.), pulse 118, and respirations 26. She was restless, agitated, garrulous, rather muddled, and confused. During the next few days symptoms strongly suggestive of manic-depressive psychosis developed. Sometimes she was very agitated and aggressive, and heavy sedation was necessary—a mixture containing 5 gr. (0.32 g.) of sodium barbitone and 1 gr. (65 mg.) of phenobarbitone as required, and occasionally "somnifaine."

As her condition did not improve it was decided to transfer her to the United Kingdom by air. She travelled with a female nurse on the seventh day of her illness. Her condition then was one of hypomania.

During the flight she was very talkative and somewhat noisy. She required three doses of the above mixture, and one dose, 30 min. (1.7 ml.), of "somnifaine." Despite sedation she slept very little. She took a light tea and dinner and breakfast. She travelled in a semi-recumbent position, the back of the chair being lowered fully, and her feet elevated on cushions. During the two stops on the journey she remained in the plane because of her mental condition. On the flight she went to the toilet three times, but had to be aided by the nurse and air hostess owing to her unsteadiness. On one occasion she suddenly complained of feeling cold, especially in her feet, and she collapsed. She was wrapped in blankets, and hot-water bottles were provided. Her respiration remained normal, and her colour was very good throughout the flight, apart from the attack just mentioned.

On arrival at an airport in this country she was obviously psychotic, and was sent to the nearest mental hospital. On her admission there she was still mentally rather confused and was prone to ramble incoherently. Physically she seemed well nourished and in good general health. Her pulse was regular and strong. No evidence of any thrombosis was noted. Her blood pressure was 146/100, temperature 98.8° F. (37.1° C.), pulse 80, respirations 18. During the course of the next two days her mental condition improved. The general picture favoured the diagnosis of a "manic-depressive psychosis." Her illness appeared to be reactive in origin, and I formed the opinion that the prognosis for therapy was good.

Two days after admission she complained of pain in the back all the afternoon, and at about 6 p.m., when in a wheel-chair, she suddenly became rigid, cyanosed, and stertorous in her breathing, with signs of syncope and collapse. She now complained of pain in the back and ankles. Her pulse was weak and irregular, and her general condition

poor. A tentative diagnosis of coronary infarct was made. She gradually weakened, dying next morning.

Post-mortem Report.—A well-nourished healthy woman with no physical lesions discernible other than the following: (1) all the veins of both calves were thrombosed; (2) one acute infarct at base of right lung; (3) lungs, numerous rather soft *ante mortem* clots. Cause of death: pulmonary embolism.

COMMENT

This patient, well nourished and of good physique, was examined physically before embarkation, on arrival at the airport, and on arrival at the hospital in this country. No evidence of any physical lesion was found. The blood pressure, temperature, pulse, and respirations were normal at each examination. There was no negligence, and in such a case thrombosis and embolism could not be anticipated. Many patients in much worse physical condition have made the journey without mishap. However, being wise after the event and reviewing the case in retrospect, the following points are relevant.

It is recorded that the commonest site of venous thrombosis leading to pulmonary embolism is the veins of the calves (Willis, 1950). Such thrombosis is not likely to be discerned by physical examination. The facts that might have led to thrombosis in this case are: (1) Bed treatment with possibly insufficient mobility for seven days prior to embarkation. (2) Some exhaustion due to her hypomanic excitability. (3) Sedation necessary to try to combat her excitability. (4) Prolonged immobility on the plane for reasons stated (the journey took approximately 18 hours). (5) Pressure on the calves from the mere weight of her legs against the pillows supporting them. (6) The plane was, of course, "pressurized," but even this precaution does not supply exact ground atmospheric pressure of oxygen, and in her condition this may have had some slight effect. (7) The collapse on the plane was probably due to a small infarct, and had it been possible to realize this preventive measures might have been taken to avoid further infarction (Evans, 1951).

The occurrence of the rare advent of thrombosis in a psychiatric case is no more a contraindication to the transport of such cases by air than a similar possibility is a contraindication to a major operation in surgical patients. There are certain cases in which it is essential to take the risk. Moreover, thrombosis of this type is not peculiar to air travel and might equally well occur in any other method of travel involving prolonged immobilization.

Whenever possible the following prophylactic precautions against this complication are indicated: (1) Adequate mobility prior to embarkation. (2) Ordinarily patients should not be transported by air unless they are well enough to walk by themselves and to take walking exercise at each intermediate stop. (3) The question of sedative treatment should receive very careful consideration, and wherever it is at all possible the patient should be moved to the nearest centre where E.C.T. is available, and treated there until she is well enough to make the journey with the minimum of sedation and able to walk about at intermediate stops and regularly during the journey. (4) It is obvious that if thrombosis can occur in a patient of this type, apparently in very good physical health, it must be guarded against even more in patients suffering from physical illness. (5) In all cases in which the above precautions are not practicable and in those patients having for one reason or another to remain recumbent, special prophylactic measures should be taken—for example, breathing exercises, massage, frequent changes of position, active movements of the legs, and appropriate use of heparin (Evans, 1951).

DONALD BLAIR, M.D., D.P.M.,
Consultant Psychiatrist.

REFERENCES

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