



Tropical Medical Bureau

International Vaccination and Advice Centres

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Deep Venous Thrombosis associated with long haul travel



Background

Deep Venous Thrombosis (DVT) is relatively rare, but nevertheless it is a potentially life-threatening condition which is usually associated with those who are bedridden or those who have had significant surgery. The disease can be painless and the affected individual may have no knowledge of the seriousness of their situation before the clot moves towards the heart and lungs.

DVT and long-haul travel

DVT, in association with long haul travel, has recently been highlighted through publicity in the media and so travellers are becoming increasingly aware of the potential risks. Even though the numbers involved are small when compared to the total number travelling, venous blood clots are believed to kill more than 100 air passengers a year worldwide. Even then, it is thought that this figure may be a gross underestimation. Many patients may develop the condition some weeks following their return home and so not associate it with their recent travel.

Cause

This results when small blood clots form in the legs during four or more hours confined in a tight seat such as the economy class sections of most aircraft. When the plane lands, the clots normally dissolve. However, larger clots may not and they may then break loose, sometimes days or weeks later. The venous circulation carries these blood clots towards the heart and lungs and this can cause serious illness or even lead to sudden death in those affected.

Clinical picture

An individual who develops venous clots in their legs may experience no signs whatsoever of this potentially life threatening condition. Others may notice some inflammation or tenderness in their calf muscles. Swelling of the ankles is very common on long-haul flights. It is often associated with decreased blood flow and is quite normal. However, it may also be an early sign of blood clots developing in the legs.

General Risk factors

There are various factors relating to travel which all contribute to the risk of DVT such as;

- ✓ Dehydration - due to low cabin air humidity, insufficient fluid intake and the diuretic effects of alcohol and caffeine
- ✓ Low oxygen levels (hypoxia) - those with lung disease eg smokers, bronchitic patients
- ✓ Restricted movement in-flight

Specific Risk factors

Even though the risk factors mentioned above are important there are some specific medical conditions which may increase the risk even higher for long-haul travellers;

- ✗ Those taking the Oral Contraceptive Pill
- ✗ Those with Varicose Veins
- ✗ Those who are particularly Overweight
- ✗ Those who Smoke

Preventing DVT

The risk of DVT can be minimised by ensuring that, where possible, the specific risk factors mentioned above are reduced. Breaking the long-haul flight into shorter sections (eg stopping off in SE Asia on the way to Australia) will lessen the risks considerably. It would be necessary to discontinue either the contraceptive pill or cease smoking for at least one to two months before flying to significantly lessen the risks! Those with varicose veins can improve their situation by applying a specialised stocking which exerts maximum pressure at the ankle level and then progressively decreases the pressure toward the top of the leg. This compresses the leg veins and increases blood flow out of the leg, thus helping to prevent clot formation. For the elderly person, pregnant women and overweight travellers this is a simple method of lowering their risk from DVT. Stockings should be applied before the flight commences.

Aspirin and flights

Aspirin is used to lessen the 'stickiness' of blood. It is often recommended that it should be used immediately following heart attack to reduce the severity of the clot formation. In a similar fashion it is postulated that taking aspirin around the time of a long-haul flight should lessen the risk of clot formation. There is limited evidence at this time to support this hypothesis but in many situations it is probably a wise precaution. Obviously those with a sensitivity to aspirin (allergy, gastric irritation, heartburn etc) should be very careful before taking this medication. While waiting for the results of further research it is recommended that most at-risk travellers take a single aspirin (300mgs) the night before they travel, one the morning of their flight and one the day after arrival in their destination. Clearly this routine should be carried out for both the outward and homeward bound legs of the trip.

What to do before you fly

Each individual travelling on a long haul flight should take the necessary precautions to reduce the risk of blood clots forming. These may include:

- ✓ If at particular risk, take aspirin as described above
- ✓ Wearing compression stockings
- ✓ Drinking plenty of water while on-board to stay hydrated
- ✓ Taking regular walks around the plane (2 hourly)
- ✓ If possible, massage your legs upwards, starting with the calves and then lower thighs
- ✓ Flex and extend your calf muscles 10 times every half hour to keep the blood pumping

After your flight

Following any long-haul flight, if an individual experiences swelling, pain, tenderness or inflammation in their calf muscles they should immediately seek medical attention. Some patients may also present with a degree of shortness of breath or signs of a pneumonia and, again, these are extremely important signs which require urgent medical attention. Remember the signs of DVT may only occur some days or weeks after travel.

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