

**PERIPHERAL ARTERIAL DISEASE**

# Excess cholesterol can hurt limbs too

*Clogged arteries in the legs could have cost patient more than a toe as P.A.D. can also affect organs like brain, kidneys, intestines*

EVELINEGAN  
eveline@mediscorp.com.sg

SINGAPORE – For six years, Mr Steven Choo lived with a nagging numbness in his legs.

The 63-year-old retired businessman only sought proper medical attention in 2011 when a blister on the fifth toe of his right foot would not heal. Instead of getting better over time, the wound turned watery and the skin around it blackened.

What Mr Choo heard from his doctor shocked him: The arteries in both his legs were almost fully clogged with cholesterol deposits called plaque.

Prior to this, he had sought help from a TCM physician.

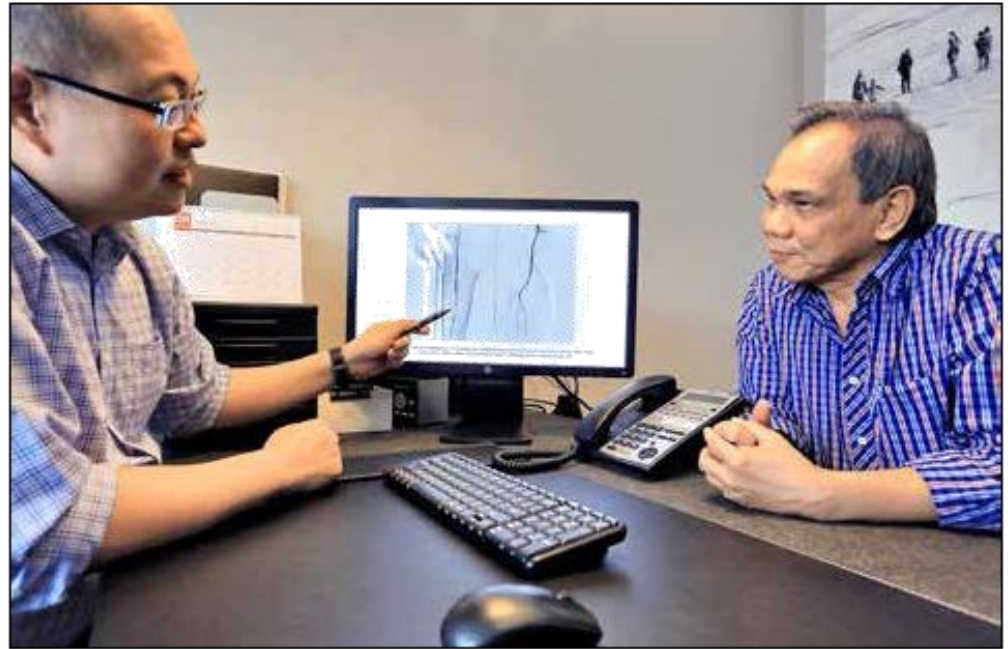
“My TCM physician told me it was due to ‘wind’. Never in my life did I think that the pain was due to the blocked arteries in my legs,” said Mr Choo, a former heavy smoker who also suffers from diabetes.

“Because of what the physician said, I actually loaded up on ‘warming’ food like curry, which ironically worsened my high cholesterol.”

**CHOLESTEROL DEPOSITS CAN ACCUMULATE ANYWHERE**

Mention high cholesterol and clogged heart arteries come to mind. More often than not, however, the damage does not end there.

Plaque can accumulate in any part



Dr Benjamin Chua, left, a vascular and endovascular surgeon at Mount Elizabeth Novena Hospital, shows Mr Steven Choo X-rays of the clogged arteries in his legs. The clogs are the cause of peripheral arterial disease or PAD. PHOTOS: KOH MUI FONG

of the body, including the walls of the leg arteries, as in Mr Choo’s case, leading to a condition known as peripheral arterial disease (PAD).

Plaque build-up may also occur in other arteries that supply blood to organs, including the brain, kidneys and intestines, said Dr Benjamin Chua, a vascular and endovascular surgeon at Mount Elizabeth Novena Hospital.

Studies estimate that PAD affects as many as 15 per cent of people over the age of 70, said Dr Dharmaraj Rajesh Babu, consultant at the Department of Cardiac, Thoracic and Vascular Surgery at National University Heart Centre Singapore (NUHCS).

Besides advancing age and high cholesterol, poorly controlled diabetes, heavy smoking and hypertension also increase a person’s risk of developing the condition.

“As the number of elderly patients with diabetes and smokers is on the rise in Singapore, so is the number of people with PAD,” said Dr Dharmaraj.

Yet, there is a general lack of public awareness about the disease.

The experts shared that it is not unusual for patients to attribute their symptoms to ageing, nerve weakness, joint pain or muscle ache and strain.

According to Dr Chua, PAD can be detected using a simple examination during routine consultations by any physician, including a general practitioner.

**PROGRESSIVE WARNING SIGNS OF PERIPHERAL ARTERIAL DISEASE**

- Foot, calf or thigh pain after walking a fixed distance, for instance, about 100 metres. You may need to rest and stand still for a while for the pain to disappear, but the pain reappears once you start walking again.
- Over time, you may be unable to walk more than 10 to 20 metres without pain.
- You may be unable to lie down to sleep due to the severe pain when the disease worsens.
- Small wounds on the foot or toes may not heal, and instead, become ulcers.

SOURCE: DR BENJAMIN CHUA, VASCULAR AND ENDOVASCULAR SURGEON, MOUNT ELIZABETH NOVENA HOSPITAL

For instance, for PAD of the legs, the doctor may feel the pulses at certain parts of the legs. If the pulses are weak or absent, you may be referred to a vascular specialist for more detailed diagnostic tests, said Dr Chua.

**HIGHER RISK OF HEART ATTACK OR STROKE**

Left untreated, PAD usually worsens. “As more plaque is deposited over time, the artery gets narrowed and sometimes, even becomes completely blocked off. As such, there is poor or no blood flow to the legs or the organs

● CONTINUED ON PAGE 37



Ten years ago, Mr Choo could barely keep up with his wife at the mall. He now feels more fit and even volunteers in church.

CONTINUED FROM PAGE 36  
involved," explained Dr Chua.

A person with PAD has a higher risk of developing a heart attack or stroke than someone without.

Dr Dharmaraj said: "Some studies show that the risk of a heart attack is 20 per cent in five years, and the risk of death due to cardiovascular disease is 10 to 15 per cent in five years."

In the legs, untreated PAD can progress to tissue loss and gangrene of the foot. This can result in a major below-knee or above-knee amputation, according to Dr Chua.

Worldwide, a major leg amputation as a result of diabetes complication and PAD takes place every 30 seconds, he said.

#### EARLY DETECTION IS IMPORTANT

Mr Choo's experience is a classic example of what could happen when PAD is left unchecked.

When detected in the early stages, patients are mostly treated using medications such as blood thinners and statins (cholesterol-lowering drugs) to prevent life-threatening complications, said Dr Dharmaraj.

He added: "Early and appropriate intervention by vascular specialist can save the leg and preserve quality of life."

By the time Mr Choo found out about his condition, his toe could no longer be salvaged and had to be amputated.

"If the arteries in Mr Choo's legs become totally blocked, he may

even develop gangrene of his other toes," said Dr Chua, who had treated Mr Choo.

#### TREATMENT FOR PAD

To widen his blocked arteries, Mr Choo underwent two separate angioplasties that are minimally invasive procedures commonly known as ballooning. He also had three stents — small mesh tubes used to keep arteries open — placed in each leg.

Along the way, his doctor also picked up an undiagnosed heart disease: Mr Choo's coronary artery was just as severely clogged. He later underwent a third angioplasty with stent placement for his heart.

"I might have lost one little toe, but the doctor saved my life and both my limbs," said Mr Choo.

In severe cases, a PAD patient may even require bypass surgery to construct a new route of blood flow to the legs, said Dr Chua.

The toe amputation was a wake-up call for Mr Choo, who has since quit smoking. He also walks 5km every night and consumes more wholegrain products, fruit and vegetables. Once easily exhausted, Mr Choo now feels fit enough to take on missionary and volunteer work in church.

"Ten years ago, I could barely keep up with my wife at the mall. It's amazing how much fitter I feel now with the right treatment and a healthier lifestyle," he said.



Some studies show that the risk of [a person with PAD having] a heart attack is 20 per cent in five years, and the risk of death due to cardiovascular disease is 10 to 15 per cent in five years.

**Dr Dharmaraj Rajesh Babu**  
CONSULTANT AT THE  
DEPARTMENT OF  
CARDIAC, THORACIC  
AND VASCULAR SURGERY  
AT NATIONAL UNIVERSITY  
HEALTH CENTRE  
SINGAPORE (NUHS)