Novel diagnostic procedure

A 64-slice multi-detector CT scan could evaluate the change of the left atrial appendage thrombi of the atrial fibrillation patient, which was reduced by warfarin therapy

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Summary

Curable cause of stroke is the left atrial appendage (LAA) thrombi of atrial fibrillation (AF) patients. Some AF patients have the LAA thrombi. It is very important to cure AF patients by warfarin. Transoesophageal echocardiography (TOE) is the usual clinical tool to detect the LAA thrombi. Recently, a 64-slice multi-detector CT (64-MDCT) scan enables us to display the LAA thrombi more easily than TOE.

I reported a case that a 64-MDCT scan had been used successfully in displaying the change of the LAA thrombi reduced by warfarin therapy. The size of the LAA thrombi was reduced from 25.2 mm × 19.3 mm (figure 1) to 22.1 mm × 14.8 mm (figure 2) after the 3-month warfarin therapy.

It was useful to estimate the LAA thrombi by a 64-MDCT scan to estimate LAA thrombi itself and the change of LAA thrombi to evaluate the effectiveness of warfarin therapy.

BACKGROUND

Presently, to check the thrombi of left atrial appendage (LAA), transoesophageal echocardiography (TOE) is usually used. But TOE is semiinvasive, and the image of it is

often unclear. But a 64-multi-detector CT (MDCT) scan is more non-invasive, and the image of it is much clearer.

Many doctors don't know the facts. So, I show the example.

Figure 1 A 64-slice multi-detector CT shows the thrombi (25.2 mm × 19.3 mm) in the left atrial appendage (LAA) before the warfarin therapy, with the unclear and vague rope or a piece of cloth in LLA. The merge of thrombi is not so clear.

Figure 2 A 64-slice multi-detector CT shows the decreased size of thrombi (22.1 mm × 14.8 mm) in the left atrial appendage (LAA) after the 3-month warfarin therapy. The unclear and vague rope or a piece of cloth in LAA is disappeared and the merge of thrombi becomes much clearer.

CASE PRESENTATION

The patient was female and the age was 77-years-old. The patient had chronic atrial fibrillation without being treated with warfarin therapy at first.

TREATMENT

The patient was treated with 3-month warfarin therapy. The prothrombin time-international normalised ratio was kept around 2, which meant the treatment was suitable.

DISCUSSION

As far as I know, this is the first report that showed the change of the LAA thrombi of atrial fibrillation patients by a 64-MDCT.

By TOE examination, LAA thrombi were not always detected clearly, because of mainly pulmonary air. In some cases, we could not detect the whole LAA thrombi clearly by TOA, and small LAA thrombi might be overlooked.

A 64-MDCT scan could display LAA thrombi more clearly than TOE as a whole image without patients' pains. So the size of LAA thrombi might be measured more easily and precisely by using the image taken by a 64-MDCT.

So the existence and the change of LAA thrombi could be detected more precisely, and the effects of warfarin therapy could be evaluated by using a 64-MDCT easily.

This ability gave a 64-MDCT scan significant advantage in comparison to the use of other imaging tools such as TOE in the evaluation of LAA thrombi, especially to evaluate the change of size and shape.

Learning points

- ▶ 64-MDCT scan could display LAA thrombi more clearly than TOE.
- ▶ 64-MDCT scan examination is easy and safe for many patients.
- ▶ Before cardioversion, to use a 64-MDCT scan for the purpose of identifying the LAA thrombi seems much easier for both doctors and patients than to use TOE.

Competing interests None.

Patient consent Obtained.

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