

# Short case

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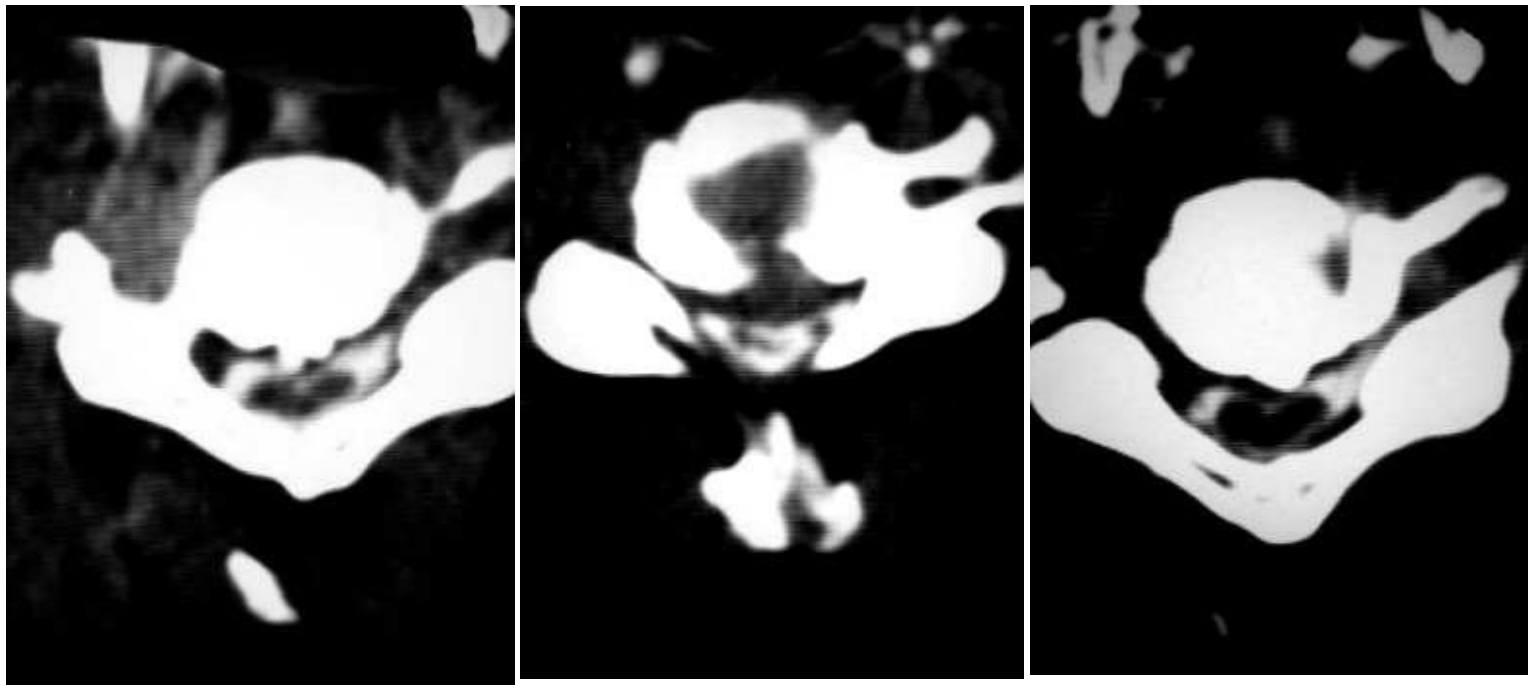
## Short case

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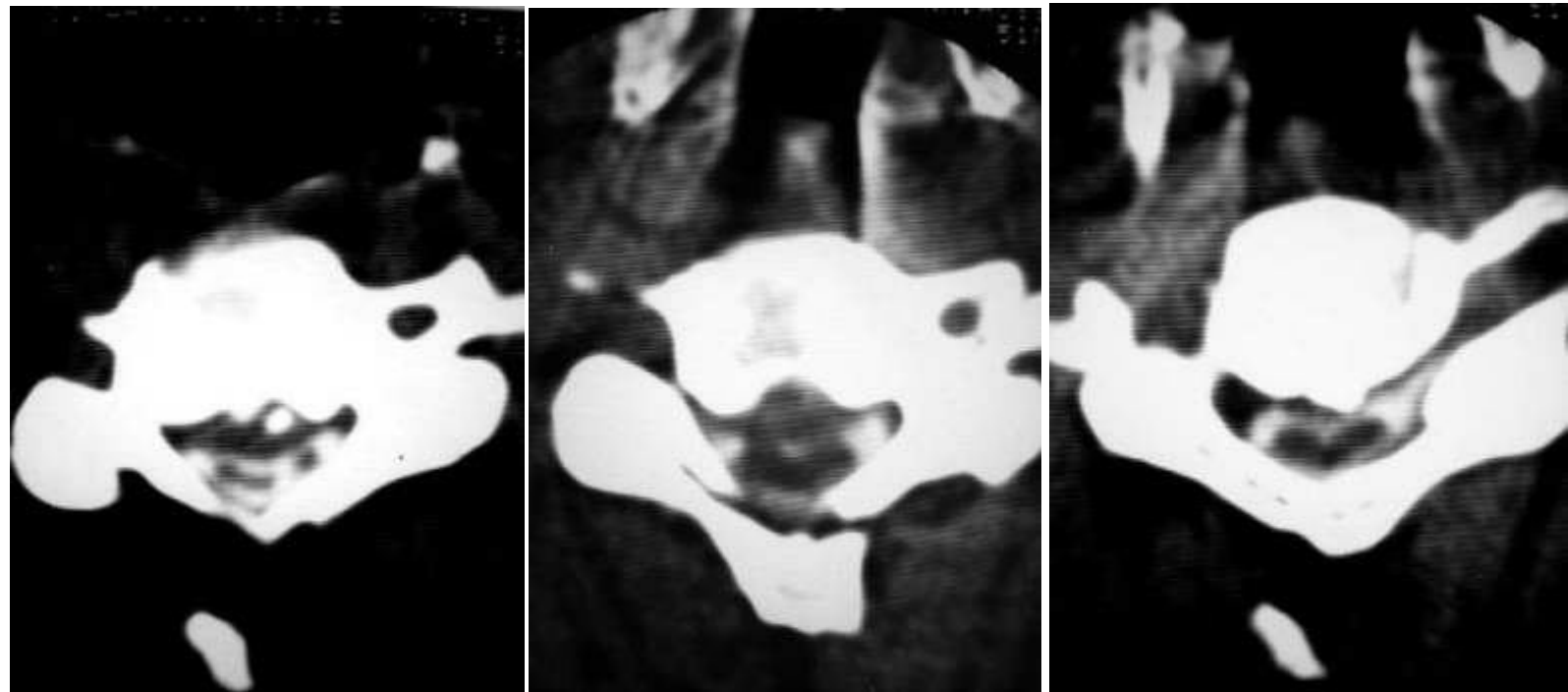
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65 years old male patient with vascular risk factors (diabetis, hypertension, increased blood viscosity etc) presented clinically with a mainly motor clinical presentation in the form of atrophy of small muscles of the hand and evidence of upper motor neuron manifestations in the lower limbs and with a clinical picture characterized by a painless onset with a chronic fluctuating course. Meticulous clinical examination revealed mild segmental sensory manifestations at C5,C6 spinal segments. Evidence of spinal cord claudication was present in the form of aggravation of weakness in the lower limbs when walking and a sensation of hotness felt in the hands when the patient walks for a distance.

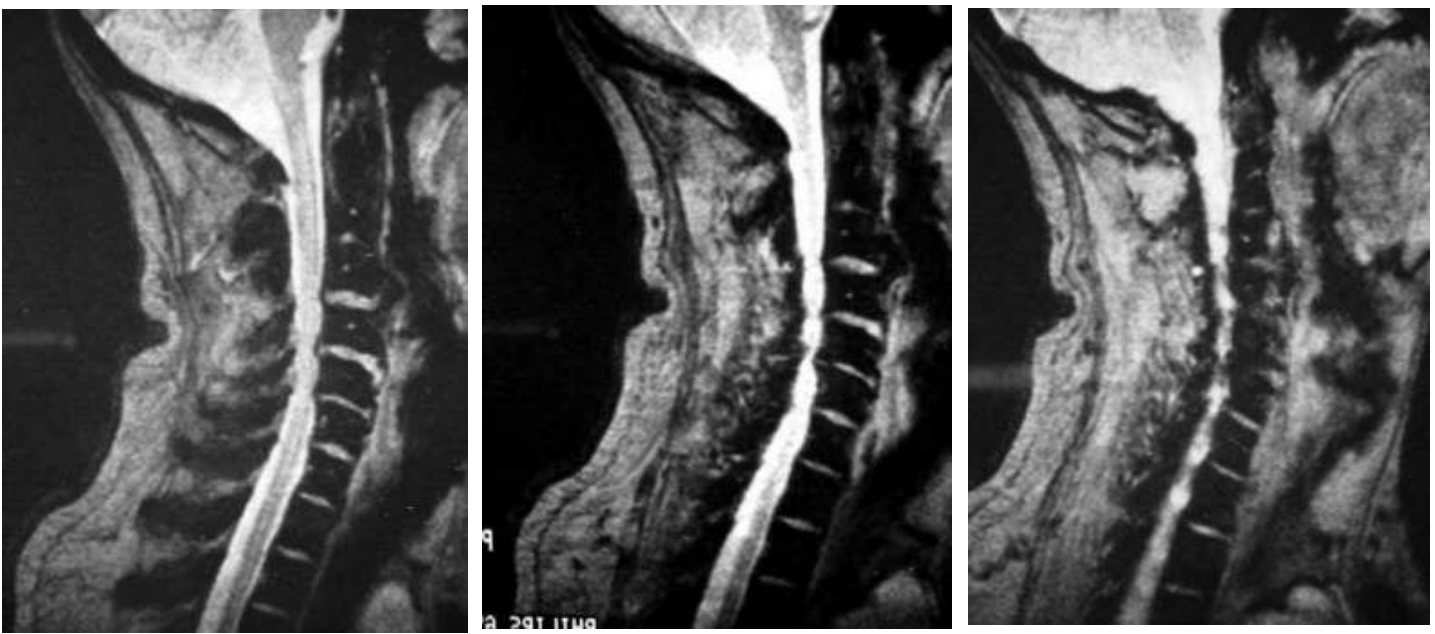
**DIAGNOSIS:** CERVICAL SPONDYLOTIC VASCULAR MYELOPATHY



**Figure 1.** CT myelography at C4,C6,C7 cervical spinal segments showing evidence of spondylitic changes in the form of posterior osteophytes, cervical canal stenosis, luschka joint hypertrophy, and segmental spinal cord atrophy at C5,C6 spnal segments



**Figure 2.** CT myelography at C4,C6,C7 cervical spinal segments showing evidence of spondylitic changes in the form of posterior osteophytes, cervical canal stenosis, luschka joint hypertrophy, and segmental spinal cord atrophy at C5,C6 spnal segments. Notice the calcified soft disc herniation.



**Figure 3. MRI T2 images showing evidence of cervical disc degeneration and cervical canal stenosis**

In the above reported case evidence of spondylitic cervical canal stenosis, with posterior osteophytes, calcified hard disc herniation and C5,C6 segmental spinal cord atrophy was demonstrated. The clinical picture was in the form of a mainly motor clinical manifestations and a remitting course with evidence of spinal cord claudication.

Because the vascular spondylitic myelopathy has a sudden painless onset and a fluctuating course with remission and exacerbation, it was frequently misdiagnosed as multiple sclerosis. However major differences are present between myelopathy due to disc disease and that due to multiple sclerosis as follows

Unlike multiple sclerosis, myelopathy due to cervical spondylosis had a sudden onset with the clinical picture developing over just a few hours.

- ◆ Unlike multiple sclerosis, the duration of relapses in myelopathy due to cervical spondylosis is very short ( on the average few hours to one or two days).
- ◆ Unlike multiple sclerosis, relapses of myelopathy due to cervical spondylosis shared a similar clinical presentation in every single patient i.e. the disease was disseminated only in time and never in place. And although signs and symptoms might be severer on recurrent episodes (mainly due to the cumulative effect of structural damage and/or the functional disturbances caused by each ischaemic episode), however the disease used to recur in the same anatomical site (dorso-lumber spinal segments) and is never disseminated in place.
- ◆ Unlike multiple sclerosis, the clinical picture of myelopathy due to cervical spondylosis is mainly motor ( in the form of weakness and atrophy) and sensory manifestations, though definite, are detected only by careful examination.

In fact the "mainly motor clinical picture" was occasionally a potential source for another misdiagnosis which is motor neuron disease or motor neuropathy. However myelopathy due to cervical spondylosis can easily be differentiated from motor neuron disease because of the relapsing remitting course, and because of the existence of definite, though subtle, sensory manifestations. Also the existence of impotence, bladder disturbances and occasional back pain are points against the diagnosis of primary motor neuron disease.

The predominance of motor manifestations in myelopathy due to cervical spondylosis is in fact another point favouring its ischemic aetiology. It is clear that when ischaemia occurs, the most vulnerable region of the spinal cord is the grey matter because its metabolic rate is three to five times greater than the metabolic rate of the white matter. This would account for the many cases reported in literature of paraparesis with little sensory manifestations and for instances of lower motor neuron syndromes of an ischaemic basis.

In cervical spondylotic myelopathy patients the motor weakness is characteristically increased by walking and relieved by rest and this is another point favouring the ischemic aetiology of myelopathy due to degenerative disc disease.

Normally walking is associated with marked increase of blood flow to the spinal cord and cauda roots to meet the increased metabolic rate of these neural structures, physiologically the spinal cord microvascular bed will dilate to accommodate the increased blood flow. Cervical canal stenosis (induced by disc disease) and the associated segmental arteriosclerosis will hinder this normal physiological "exertion induced hyperaemia" of the neural structures resulting in a temporary spinal cord "ischaemic dysfunction on exertion".

Although the prognosis following a single ischaemic episode is good, however repetition of the ischaemic episodes will ultimately result in spinal cord atrophy with irreversible neurological deficits. The patient, following admission, received medical treatment for diabetes, hypertension, antiplatelet medications and medications that improve RBCs deformability, reduce whole blood viscosity and fibrinogen level (like pentoxifylline, bezafibrate etc) and he was referred to surgery once diagnosed radiologically.

## **References**

1. Metwally, MYM: Textbook of neurimaging, A CD-ROM publication, (Metwally, MYM editor) WEB-CD agency for electronic publishing, version 10.1a January 2009

## **Addendum**

- ◆ A new version of short case is uploaded in my web site every week (every Saturday and remains available till Friday.)
- ◆ To download the current version follow the link "<http://pdf.yassermetwally.com/short.pdf>".
- ◆ You can download the long case version of this short case during the same week from: <http://pdf.yassermetwally.com/case.pdf> or visit web site: <http://pdf.yassermetwally.com>
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- ◆ At the end of each year, all the publications are compiled on a single CD-ROM, please contact the author to know more details.
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