



Short Communication

Painful abdominal contractions in patients with Parkinson disease

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ABSTRACT

We hypothesized that the unusual and painful abdominal contractions in two of our patients with Parkinson disease (PD) were linked to abdominal muscle hypertrophy. The abdominal pain was aggravated by sitting, standing, or walking, and was characterized by a powerful pulling sensation associated with palpable contractions of the rectus abdominis. When the pain decreased, the camptocormia abated. The thickness of the rectus abdominis and the relative muscle thickness ratio were greater in the two patients with abdominal contractions than in the control patients with PD without abdominal contractions. Palpable painful abdominal contractions could be associated with the presence of hypertrophy of the rectus abdominis visible on CT scan. The abdominal muscle contractions probably contribute to the development a stooped posture.

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1. Introduction

We hypothesized that the unusual and painful abdominal contractions in two of our patients with Parkinson disease (PD) were linked to abdominal muscle hypertrophy. We compared the clinical features and abdominal muscles of our patients with those of control subjects with PD without abdominal contractions.

2. Materials and methods

We studied two patients with PD with painful abdominal contractions and 14 control subjects with PD but without abdominal pain. PD was diagnosed according to the Gelb criteria.¹ We excluded patients who had any of the following conditions: possible or probable multiple system atrophy according to the Gilman criteria,² another atypical parkinsonian syndrome, non-reducible spine flexion, and large vessel disease, infarction, or tumor on cranial MRI. Other possible causes of abdominal pain were excluded by: endoscopy, barium enema examination, radiography, echocardiography, CT scan, and MRI. Neurologic and physiologic findings were assessed by at least two neurologists. Clinical information was obtained from detailed medical records. The characteristics of the pain were obtained by repeated direct patient interviews by at least two neurologists. The daily dose of antiparkinsonian agents was converted into the equivalent dose of levodopa as follows: 100 mg standard levodopa is equivalent to: 140 mg controlled release levodopa; 10 mg bromocriptine; 1 mg pergolide; 1.5 mg cabergoline; 5 mg ropinirole; 1 mg pramipexole; 10 mg

selegiline.^{3,4} The control group comprised 14 sex-matched and age-matched patients with PD (seven men and seven women) who had no abdominal pain or contractions (Supplementary Table 1). No control participant had a family history of PD or a personal history of neuromuscular disease, a diagnosis of or treatment for a malignant tumor, or abdominal surgery. The mean ($\pm$ standard deviation) of the body mass index of the control subjects (21.3 ± 2.5) was matched to that of two patients who had painful abdominal contractions (21.3 and 22.8).

2.1. Plain CT scans

Because the main location of abdominal pain in both patients with PD was the lower rectus abdominis, we examined the lower rectus abdominis by axial CT scans. The maximal thickness (A) of the rectus abdominis at the levels of the L4 and L5 corpus vertebrae was calculated. The distance (B) from the fascia between the left and right rectus abdominis muscles to the dorsal part of the vertebrae was calculated (Fig. 1e). The relative muscle thickness ratio (A/B) was then calculated.

3. Results

3.1. Characteristic features of patients with PD with painful abdominal contractions

The duration of PD in patients 1 and 2 was longer and the levodopa equivalent daily dose in patient 1 was higher than the respective values for the control participants (Table 1). The UPDRS part IV motor complications score was lower in the two patients than that of the controls. Both patients experienced a powerful

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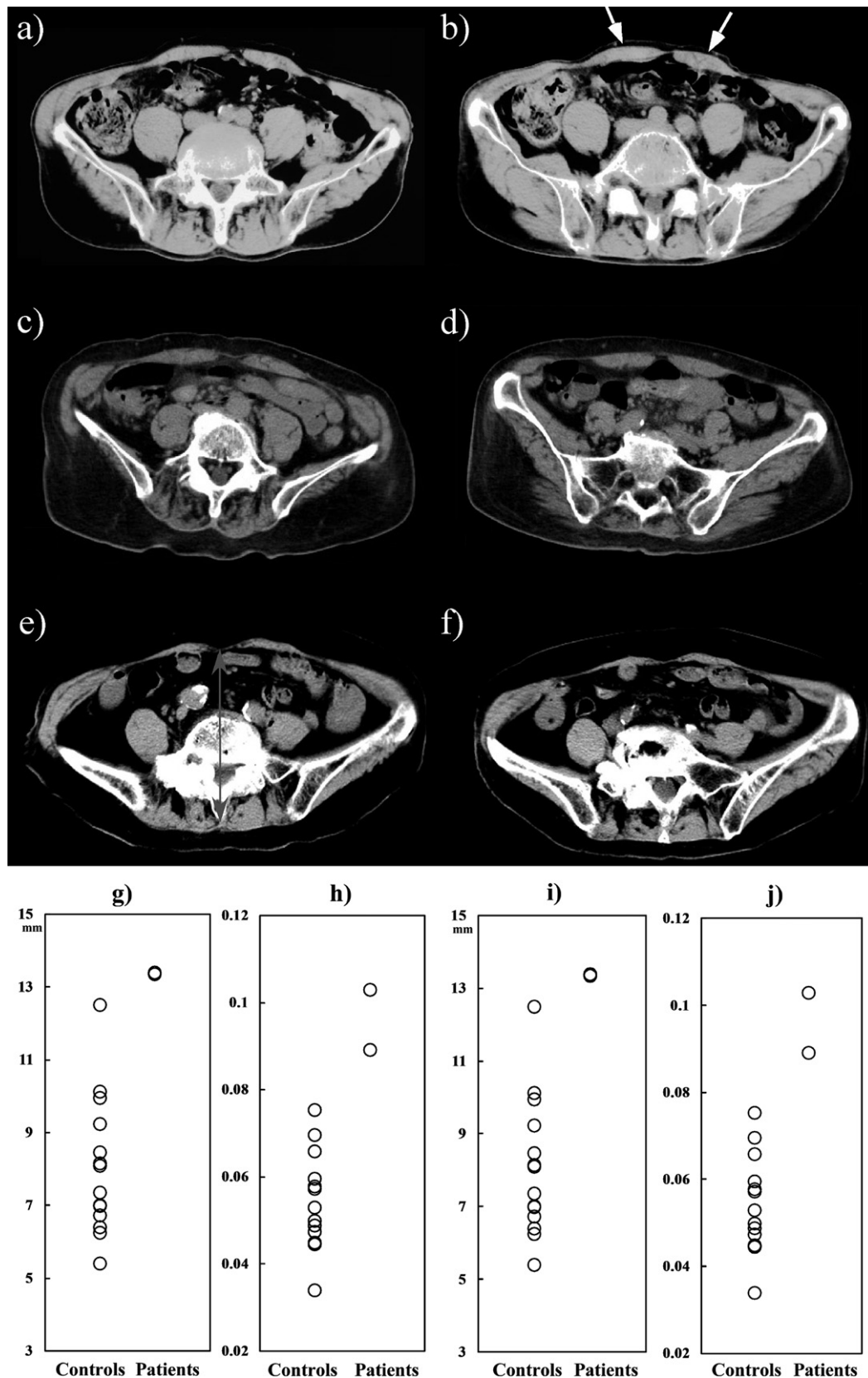


Fig. 1. CT examination of the rectus abdominis muscle for thickness of the rectus abdominis and the relative muscle thickness ratio. Patients with Parkinson disease with painful abdominal contractions (a, b) Patient 1 and (c, d) Patient 2 showing muscle thickness of the rectus abdominis (white arrows in b) was greater than that of (e, f) control participants with PD. The right panels (i, j) were obtained at L4 and the left (g, h) at L5 vertebral level. The distance from the fascia between the left and right rectus abdominis muscles to the dorsal part of the vertebrae was calculated to derive the relative muscle thickness ratio (e, gray arrow). The thickness of the rectus abdominis (g) in Patient 1 and (i) in Patient 2 was greater than that of the control PD subjects. The relative muscle thickness ratio of (h) Patient 1 and (j) Patient 2 was higher than that of the control participants with PD.

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