



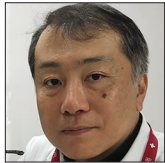
Case Report

Integrative treatment of paralytic small intestine following acute cervical cord injury: A case report

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ABSTRACT

Background: A patient developed paralysis of the small intestine following an acute traumatic hyperextension cervical spinal cord injury attributed to the ossification of the posterior longitudinal ligament (OPLL) C3–C6. The persistent ileus finally resolved utilizing Kampo medications (traditional Chinese therapy) consisting of both bukuryoin (TJ-69) and hangekobokuto (TJ-16).

Case Description: A 63-year-old male became acutely quadriplegic secondary to a hyperextension injury incurred during a fall. Radiographic studies confirmed mixed OPLL extending from C3–C6 resulting in marked cord compression, there was a clear spinal cord contusion. His neurological status using the American Spinal Injury Association (ASIA) Scale was Grade “A;” there were complete motor and sensory loss below the C5 level. After a C3–C6 expansive laminoplasty, the ASIA scale improved to Grade B. However, he then developed a persistent small intestine ileus resulting in marked abdominal distention. When conventional therapies failed to resolve the problem, Kampo medicines, consisting of both bukuryoin (TJ-69) and hangekobokuto (TJ-16), were administered. The ileus improved within 2 days and fully resolved within the 1st postoperative week.

Conclusion: The utilization of Kampo medications, consisting of both bukuryoin (TJ-69) and hangekobokuto (TJ-16), or the combined bukuryoingohangekobokuto (TJ-116) effectively resolved a postoperative paralytic small bowel ileus following a cervical laminoplasty performed in a quadriplegic patient.

Keywords: Acute cervical cord injury, Cervical ossification of the posterior longitudinal ligament OPLL, Complication management, Integrative medicine, Paralytic small intestine

INTRODUCTION

A patient with underlying severe stenosis from C3 to C6 due to cervical ossification of the posterior longitudinal ligament (OPLL) sustained a traumatic hyperextension cervical cord injury due to a fall, resulting in quadriplegia. His deficit was, according to the American Spinal Injury Association (ASIA), Grade “A”; a complete sensory/motor below the C5 level. Following a C3–C6 laminoplasty, he developed a persistent small intestine ileus that failed 3 days of conventional therapy. After 7 days of Kampo therapy (e.g., traditional Chinese–Japanese medicine) consisting of both bukuryoin (TJ-69) and hangekobokuto (TJ-16), the ileus finally fully resolved.

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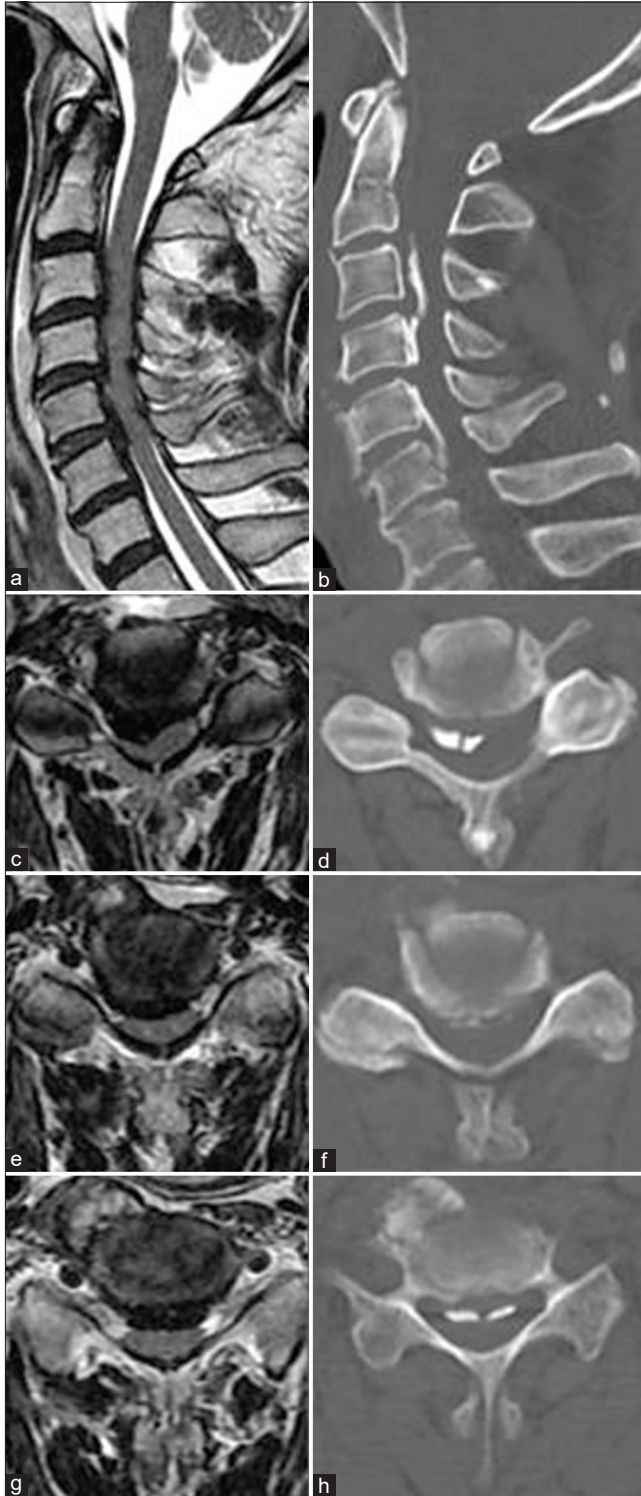


Figure 1: T2-weighted magnetic resonance images (a-d) and computed tomography scans (e-h) of the cervical spine revealing multilevel cervical cord injury associated with ossified posterior longitudinal ligament of the mixed type. Sagittal images (a,e) were obtained on the midline, and axial images at the levels of C3-4 (b,f), C4-5 (c, g), and C5-6 (d,h).

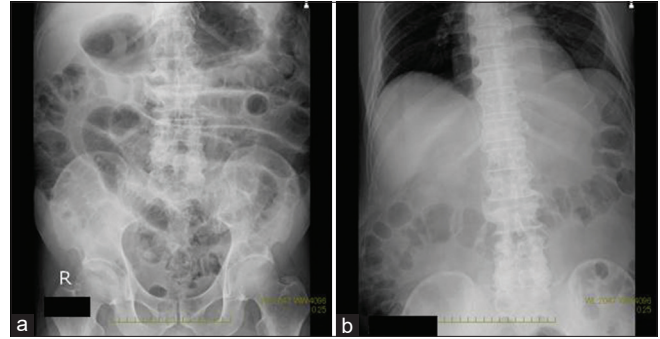


Figure 2: Plain abdominal radiographs 2 days after the operation (a) showing intestinal gas retention, which was improved by integrative treatment with Kampo medicines for 7 days (b).

CASE DESCRIPTION

A 63-year-old male, with a history of diabetes (type 2), hypertension, hyperlipidemia, and cardiac disease, was quadriplegic after a traumatic hyperextension injury (e.g., due to a fall). He rendered immediately quadriplegic ASIA Grade “A” indicative of a complete C5 motor/sensory deficit. Radiological studies revealed cervical C3–C6 OPLL resulting in marked cervical cord compression; the T2-weighted MR images revealed a hyperintense intrinsic cord signal indicative of a spinal cord injury [Figure 1]. Within 18 h after the initial injury, the patient underwent a double-door expansive laminoplasty employing a Laminoplasty Basket (Ammtec, Tokyo, Japan); postoperatively, the patient improved to ASIA Grade “B.”^[1]

However, following the surgery, the patient developed a persistent small bowel ileus. When conventional therapy (e.g., gastric suction, laxatives, dimethicone, and dinoprost) failed to resolve the ileus over the first 3 postoperative days, the patient was given Kampo medications consisting of bukuryoin (TJ-69, Tsumura & Co., Tokyo, Japan) 7.5 g/day and hangekobokuto (TJ-16, Tsumura & Co.) 7.5 g/day [Figure 2a]. The ileus improved in 2 days and resolved in 7 days [Figure 2b]. Interestingly, when the ileus recurred after Kampo medications were later stopped, reinstitution of Kampo therapy again resolved the problem.

DISCUSSION

After the spinal cord injury, abdominal distention due to paralysis of the gastrointestinal tract is commonly observed.^[5] Nasogastric tube placement and aspiration, laxatives, dimethicone, and dinoprost treatments typically resolve this problem. However, in this case, routine measures failed, and the ileus only resolved following the administration of Kampo therapy (e.g., TJ-69 and TJ-16; both are also available as bukuryoingohangekobokuto; TJ-116, Tsumura & Co.). Pharmacologically, TJ-116 provides

antegrade mobilization of the whole intestine typically within 1–2 h, normalizes esophageal peristalsis, while improving depressive mood of the patient.^[2] Several cases of intestinal gas retention have been successfully controlled with this medicine.^[2-4]

CONCLUSION

In a 63-year-old male who was quadriplegic following a hyperextension cervical cord injury, the MR and CT studies documented severe OPLL and spinal cord edema from C3 to C6. When the patient developed a persistent small intestine ileus unresponsive to the typical medications, TJ-116 Kampo therapy was instituted and effectively resolved the problem.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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