Locomotive Syndrome in Lower Amputees

YU TANABE^{*1)}, YOSHIYUKI SUEHARA^{*1)}, ATSUSHIKO TERAOKA^{*2)},
TSUYOSHI SAITO^{*3)}, KAZUO KANEKO^{*1)}

^{*1)}Department of Orthopaedic Surgery, Juntendo University Graduate School of Medicine, Tokyo, Japan, ^{*2)}The Prosthetic and Orthotic Care, the Prosthetic and Orthotic Care Center of the Tetsudo Kosaikai Foundation, Tokyo, Japan,

^{*3)}Department of Human Pathology, Juntendo University Faculty of Medicine, Tokyo, Japan

Purpose: The Japanese Orthopaedic Association (JOA) proposed the term Locomotive syndrome (LS) in 2007 to describe a condition in high-risk groups of patients with musculoskeletal disease who are highly likely to require nursing care. Subsequently, numerous studies about LS have been performed. However these studies are only designed for non-handicapped people. Lower amputees are apparently at a high risk for LS due to their physical features. Lower amputees have to be evaluated for LS. We decided to conduct a study on LS in lower amputees, and designed a comparative study with general orthopedic patients.

Methods: We surveyed 47 lower amputees who were treated in a clinic of the Prosthetic and Orthotic Care Center of the Tetsudo Kosaikai Foundation and 1,122 orthopedic patients who were treated in the orthopedic department of Juntendo University Hospital. A questionnaire that included the 25-question Geriatric Locomotive Function Scale (GLFS-25) was distributed to the participants. For the analysis, we recruited 47 amputees (46.3 years) as a lower amputee group (LA-Group) and 512 orthopedic patients (17.6 years) as a general orthopedic patients group (GOP-Group). The participants answered all of the questions on both the GLFS-25 and the Loco-check.

Results: The mean GLFS-25 score in the GOP-Group (17.2 points) was higher than that in the LA-Group (10.4 points) ($p=0.049$). However, after adjustment for differences in age and the sex ratio of the two groups, the gap closed: GOP-Group (11.3 points) and LA-Group (10.4) ($p=0.130$). Our study also revealed some of the unique risk factors for LS in lower amputees that were associated with the GLFS-25 score: amputation level ($p=0.071$), phantom pain ($p=0.06$), stump wound ($p=0.057$), frequent use of a wheel chair ($p=0.007$), exercise habit before amputation ($p=0.801$), and exercise habit after amputation ($p=0.173$).

Conclusion: Our results revealed the real risk of LS in lower amputees. The results of this study may be helpful in the treatment and prevention of LS in lower amputees.

Key words: locomotive syndrome, lower amputees, GLFS-25

Corresponding author: Yu Tanabe

Department of Orthopaedic Surgery, Juntendo University Graduate School of Medicine
2-1-1 Hongo, Bunkyo-ku, Tokyo 113-8421, Japan

TEL: +81-3-3813-3111 E-mail: k-kaneko@juntendo.ac.jp

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