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PERFORMING ARTS MEDICINE

Performing arts medicine — Instrumentalist musicians, Part II — Examination

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Summary Part I of this article's series included background information on performing arts medicine with a special focus on musicians. It covered in detail what questions need to be included in the history, when healthcare providers first examine musicians. In part II of the series, the emphasis is on the physical examination, including posture, range of motion and hypermobility, ergonomics, and instrument-specific examination procedures. The final article in the series will describe three case histories of musicians with hand pain.

Introduction

This article is the second installment of a series of three articles on performing arts medicine with an emphasis on musicians. Part I covered general background information and outlined the components of the history-taking process indicated when examining musicians. In this article the emphasis is on the examination of musicians. During the history, clinicians will start formulating clinical hypotheses, which subsequently are confirmed or denied by the physical examination. A unique aspect of the examination of musicians is the evaluation with the musical instrument

Examination

Each musician needs to be approached on the basis of professional and personal demands and not every musician requires a full examination, including an assessment of pain, posture, strength, and range of motion. (Brandfonbrener, 1990; De Smet et al., 1998). The predominant symptom of musicians is pain, which usually involves muscles (Fry, 1984; Lambert, 1992; Moulton and Spence, 1992). There is little evidence that musicians suffer frequently from tendonitis or tenosynovitis, although these diagnoses are often made (Amadio and Russoti, 1990; Bengtson et al., 1993; Bejjani et al., 1996). Most musicians have developed inefficient movement patterns not only when they play their instruments, but also during other activities or functions (Williamson et al., 2007). Based on

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empirical evidence, many musicians develop overuse syndromes with clinically relevant myofascial trigger points, even after brief periods of playing (Bryant, 1989; Meador, 1989; Chen et al., 2000; Davies, 2002). The examination for the presence of relevant myofascial trigger points will be included in part III of the series.

Posture

The influence of posture on musical performance is well recognized (Dommerholt and Norris, 1997; Brandfonbrener, 1998; Dommerholt, 2000). Musicians' postures may not be all that different from others, but the combination of deficient posture and playing an instrument may become problematic (Cailliet, 1990; Eijsden-Besseling et al., 1993; Dommerholt, 2000; Kapandji, 2000), which is why musicians' postures should be evaluated with and without the musical instrument. In this context, it is important to realize that frequently the musical instrument has become an extension of professional musicians (Ostwald, 1992). Wind instrumentalists with forward head posture may experience difficulty with their embouchure and breathing, and may suffer from frequent headaches (see Figures 1 and 2) (Samama, 1981; Brouw, 1983; Balfoort, 1985; Fernández de las Peñas et al., 2006; Fernández de las Peñas et al., 2007).

Figure 1 French horn player with forward head posture, who complained of episodic tension-type headaches, neck and shoulder pain, low back pain, decreased air volume, and difficulty with his embouchure (© 2008 — Jan Dommerholt).

Figure 2 Same French horn player with winging of the right scapula, elevation of the left shoulder, and scoliosis of the spine (© 2008 — Jan Dommerholt).

Postural asymmetries as a result of instrument design are common for example, with the violin, guitar, flute, or double bass (Norris and Dommerholt, 1996). Violinists with forward head posture and poor axial extension may have difficulty with prolonged bowing and with positioning the fingers of the left hand in the strings, due to excessive internal rotation of the left arm. Violinists often play with their head tilted to the left and left rotation of the cervical spine, elevation of the left shoulder, and a scoliotic curve of the thoracic spine, combined with a preference to carry the weight of the body on the right foot, which in turn induces a downward shift of the left pelvis, and a scoliotic curvature of the lumbar spine (see Figures 3 and 4) (Kapandji, 2000). The question remains when asymmetry becomes problematic. Not all musicians have musculoskeletal problems and clinicians need to assess ease of movement, constraints, and coordination.

The combination of awkward postures and repetitive motions has been shown to be particularly stressful and may contribute to muscle damage, tendonitis, or nerve damage (Larsson et al., 1988; Feuerstein and Hickey, 1992; Kuorinka and Forcier, 1995). The more a clinician is familiar with the characteristics and demands of musical instruments, the more accurate the assessment will be (Blanken et al., 1991; Ackermann and Adams, 2004a).

Interestingly, many musicians consult with posture and movement specialists before consulting with a physician or physical therapist (Williamson, 1998). Physical therapists tend to have a predominant biomechanical orientation, which may not always be adequate in the treatment of musicians (Hullegie, 1995). Biomechanical approaches