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Medial ankle and syndesmotic instability in a patient with ocular myasthenia gravis - A case report

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Abstract
Ocular form of myasthenia gravis is a rare disorder clinically presented as fatigue, ptosis and diplopia. The condition and its varied effects may be contributing factors for repetitive and recurrent ankle sprains. Residual ankle instability in such cases has not been studied. We present here a case of ocular myasthenia gravis with frequent tripping leading to medial ankle instability along with tibiofibular syndesmosis injury. A careful clinico-radiological evaluation was followed by appropriate surgical management to successfully treat and alleviate the symptoms.

Keywords: Ocular Myasthenia gravis, Ankle injury, Medial ankle instability, Syndesmosis, Treatment, Fixation, Ligament Repair.

1. Introduction
Anteroinferior tibiofibular, posterior inferior tibiofibular and interosseous ligaments are part of syndesmosis, an integral stabilizer of ankle mortise. Significant deltoid injury without associated injuries is a rare disorder. Guidelines to treat these injuries in association with syndesmotic and lateral ligamentous ones are not uniform. Unstable injuries or those along with above mentioned structures are better treated with operative management [1]. Myasthenia gravis is an autoimmune disorder presenting with variable weakness and sometimes may present with only ocular symptoms like ptosis and diplopia due to selective involvement of muscles of the eyes and eyelids [2]. The decreased field of vision, diplopia and compromised sense of depth at night may lead to frequent tripping and recurrent ankle sprains leading to chronic residual ankle instability.

2. Case Report
A 45 year old male patient presented to us with complaints of recurrent pain and feeling of instability in his right ankle. There was a history of frequent tripping and minor ankle sprains for which no treatment was taken and the patient continued activities of daily living with mild pain and discomfort. The patient attributed these injuries to low vision due to ptosis and diplopia especially at night. He has been diagnosed as a case of ocular myasthenia gravis four years back though the condition has affected him since the adolescence as per the history. The patient was advised multiple treatment options but could not follow up for compliant therapy and discontinued any further medical consultation. He had a history of severe drooping of both eyelids, especially after a couple of hours of work and increases as the day passes leading to a narrow field of vision and diplopia. On examination, he had ptosis and the lids could not be opened fully even after the forced effort (Fig.1). There was history of no other clinical problem noted on local or systemic examination. He did not give consent for further tests to confirm the diagnosis like an edrophonium stress test or others as he said he was here for ankle problem and has well accustomed to ocular disorder. Ankle has no welling but pain over anteromedial gutter and medial instability. Distal neurovascular status was intact. The tests for syndesmotic injury were inconclusive due to chronic status. The radiograph of ankle showed increased medial space suggestive of medial instability and the possibility of deltoid ligament injury in the absence of any fracture. The syndesmotic space also seemed abnormal with the suggestion of associated syndesmotic injury (Fig.2). The advanced imaging modalities like computerized tomogram or magnetic resonance imaging were refused by the patient. The provisional diagnosis of deltoid ligament injury along with syndesmosis injury without fracture was made and patient planned for operative intervention after informed consent.

The repair of torn deltoid ligament was done using appropriate incision and standard manner followed by placement of a syndesmotic screw traversing three cortex. The adequacy of procedure was confirmed on radiography with normal and stable ankle mortise. A protective back- slab was given initially for support, pain relief and edema control which was removed after three weeks to start ankle physiotherapy. toe and adjacent joint movements were encouraged all through the treatment.

Fig 1: Clinical picture showing marked ptosis at normal (a) and on forced eye opening (b) depicting minimal improvement.

Fig 2: Radiograph showing increased medial space and probable syndesmotic injury.

Fig 3: Post-operative radiograph with stable ankle mortise and syndesmotic screw in place.

3. Result

The patient had significant improvement in gait and apprehension toward instability diminished gradually in the follow up. There was no immediate or remote complication related to surgery or wound. The tricortical syndesmotic screws were not removed and patient was weight bearing on them with little impact on activities of daily living and no clinico-radiological feature of screw impingement or failure.

4. Discussion

Chronic pain over anteromedial aspect of ankle along with feeling of instability may result from medial ankle instability. Recurent injuries, pain and tenderness are other common patterns associated with it. A valgus and pronation deformity may be additional feature suggesting chronic medial ankle instability [3]. Hintermann *et al.* in a prospective exploratory study depicting results of clinical and anatomical defects seen in instability cases suggests pain in medial gutter as a common finding and presence of lateral instability in many cases [4]. Arthroscopy was found to be a useful tool to further evaluate the pattern and involvement of anatomical structures [5]. Arthroscopy has also been found useful in assessing residual deformities after ankle sprains and following residual disability [6]. Our case belonged to a low socioeconomic status so decision of arthroscopy was withheld. Reliance on clinical and radiological assessment was noted. Deltoid ligament plays a key role in medial ankle stability and has been found to be associated with concomitant syndesmotic injuries rarely in certain cases [7]. Lateral talus subluxation in normal or stress radiograph along with swelling over syndesmotic and amteromedial ankle is common feature in such injuries. Reduction of syndesmosis and screw fixation has been advised in these cases. Trans-fixation syndesmotic screws are found to be sufficiently stable for soft tissues and interosseous membrane to heal [8].

Tests for ocular myasthenia although less specific than generalised form are edrophonium challenge, repetitive nerve stimulation, single-fiber electromyography (EMG) of the frontalis, and assays for antibody directed against the acetylcholine receptor among others [9]. Steroids, acetylchoinestarase inhibitors, azathioprin, mycophenolate or intravenous immunoglobulins are various pharmacological agents used to treat ocular myasthenia gravis [10]. Our case was a neglected one and we referred the case to medicine department and they started the appropriate supervised treatment.

5. Acknowledgement – None.

5.1 Conflict of interest – None.

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