Chronic ankle instability

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Ligamentous injuries of the ankle are one the most common problems seen by general practioners and emergency physicians.• The bones involved in anklearticulation are the distal tibia and fibula, including the malleoli and the talus. The talus is a wedge-shaped bone that is wider anteriorly than posteriorly and fits into the mortise formed by the bound tibia and fibula.• This articulation is maintained by many ligamentous attachments, on the lateral side by the anterior talofibular, calcaneofibular and posterior talofibular ligaments and medially by the deltoid complex of ligaments.• The most common mechanism of injury in ankle sprains is a combination of plantarflexion and inversion. The lateral stabilizing ligaments, are most often damaged. The anterior talofibular ligament is the most easily injured. Concomitant injury to this ligament and the calcaneofibular ligament can result in appreciable instability.• Medial ankle stability is provided by the strong detoid ligament, the anterior tibiofibular ligament and the bony mortise. In medial ankle sprains, the mechanism of injury is excessive eversion and dorsiflexion.• Ankle trauma is evaluated with a careful history (situation and mechanism of injury, previous injury to the joint, etc.) and careful physical examination (for example, inspection, palpation, weight-bearing status, special tests, MRI and arthroscopy).• Ankle sprains have been characterized as either grade I, grade II or grade III. Complete rupture of the ligament is indicative of a grade III sprain (unstable ankle). The diagnosis of ankle instability through the use of talar tilt (or stress) x-rays. In a healthy ankle, this tilt should only extend to about 5o; in the patient with an unstable ankle, the tilt will extend to 15-20o on x-ray. Treatment of grade III sprains remains controversial. There is much debate in the literature regarding the use of surgical intervention versus casting. Precence of associated intra-articular lesions (osteschondral fracture), positive anterior drawer test, talar tilt more than 15 deg and widened mortise, are indications of surgical treatment of acute ankle sprain.• If the sprain happens frequently and pain continues for more than four weeks to six weeks, they may have a chronic ankle sprain. Activities that tend to make an already sprained ankle worse include stepping on uneven surfaces, cutting actions and sports.• Chronic ankle instability is either functional (due to proproceptive defect) or -mechanical (due to ligamentous laxity), and sometimes associated with occult intra articular lesion such as chronic synovitis, impingement syndrome and chondral lesion.• Which may require pre-operative arthroscopic diagnosis and treatment. Failure of conservative treatment of Chronic ankle instability indicates surgical treatment.• Surgical intervention falls into two main categories. The first is anatomic reconstruction, in which the stretched or torn ligament is repaired and allowed to

heal in a shortened position.• The second type of surgery is persooneal substitution ligament reconstruction, a procedure in which the ligament is replaced with a piece of tendon from the patient's ankle, in the latter procedure, holes are drilled into the bone in order to secure the tendon, providing a very strong and stable connection.• Allograft reconstruction of the lateral ligaments of the ankle is a method of treatment which restores stability, without sacrificing normal tendons. The use of allograft eliminate morbidity at the donor site.Chronic rupture of the distal tibiofibular syndemosis:When diastasis has been present longer than 3 months, it is highly likely that significant arthritis has begun. In this case, arthrodesis of the distal tibiofibular joint may be necessary if symptoms are sufficiently severe. If arthritis is not significant, reduction of the syndesmosis and reconstruction of the ligaments are advisable. Two screw are usually warranted and the two cortices are engaged. The screws are tightened with the ankle in full dorsiflextion to help avoid over-tightening and loss of motion.After treatment:A cast is applied fro the base of the toes to the tibial tuberosity. At 3 weeks the cast is removed, and a walking cast is applied for 4 weeks. At 8 weeks the screw across the joint is removed, and since its head is just beneath the skin, its removal is usually easy. Prompt removal is necessary because the screw becomes loose and sometimes breaks within the tibiofibular joint.Ankle instability is one of the commonest complains following ligamentous injuries. Patients with a confirmed rupture of at least one of the lateral ligaments of the ankle were randomly assigned to receive either operative or functional treatment. They were evaluated at a median of 8 years. Compared with functional treatment, operative treatment gives a better long-term outcome in terms of residual pain, recurrent sprains and stability.(4)40- Foster R.: Acute Ankle sprains, Instr Course Lect.; 50: 515-20, 2003 [Medline].41- Brostrom L.: Sprained ankles, III. Clinical observations in recent ligament ruptures, Acta Chir. Scand, 130: 560-569, 1965.42- Rasuaaen O.: Stability of the ankle joint; analysis of the function and traumatology of the ankle ligaments. Acta Orthop Scand (Suppll) 211; 1, 1985.43- Needleman RL, Skrade DA, Stiehl JB: Effect of the syndesmotic screw on ankle motion. Foot Ankle; 10: 17-24, 1989.44- Huson A.: Functional anatomy of the foot. In Jahss MH, ed. Disorders of the Foot and Ankle, vol 1, ed 2. Philadelphia: W. B. Saunders,: 409432, 1991.45- Kgaersgaard-Andersen P, Wethelund JO, Nielsen S: Lateral talocalcaneal instability following section of the calcancofibular ligament: A kinesiologic study. Foot Ankle; 7: 355-361, 1987.46- Slawski DP, West OC.: Syndesmotic ankle injuries in rodeo bull riders. Am J Orthop, 26: 794-797, 1997.47- Mizel MS, Miller RA, Mwrk W.: Soft tissue injuries Of the Ankle, American Academy of Orthopedic Surgeon, 18: 232-233, 1998.48- Edwards, G.S. Jr., and DeLee, J.C.: Ankle Diastasis Without Fracture. Foot Ankle, 4: 305312, 1984.49- Rockwood Ch, Green P: Rockwood and Green's fractures in adult, Lauge-Hansen, N.: Ankle Fractures, Diagnosis and Treatment, 5th ed, Lippincott Willams & Wilkins, 2001.50- Rockwood Ch, Green P: Rockwood and Green's fractures in adult, Lauge-Hansen, N.: Ankle Fractures, Diagnosis and Treatment, 5th ed, Lippincott Willams & Wilkins, 2001.51- Nielsen JO, Dons-Jensen H, Sorensen HT: Lauge-Hansen classification of malleolar fractures: an assessment of the reproducibility in 118 cases, A cta Orthop scand 61: 385, 1990.52- O'Leary C, Ward FJ: A unique closed abduction – external rotation ankle fracture, J Trauma 29: 119, 1989.53- Whitelaw GP, Sawka MW, Wetzler M, et al: Unrecognized injuries of the

lateral ligaments associated with lateral malleolar fractures of the ankle, J Bone Joint sure. 71-A: 1396, 1989.54- Cass JR: Ankle instability: Current concepts, diagnosis and treatment, Mayo Clin. 59: 165-170, 1984.55- Cox, J.S: Surgical and non surgical treatment of acute ankle sprains. Clin. Orthop., 198: 118-126, 1985.56- Georgen, T.G: Roentgenographic evaluation of the tibiotalar joint. J Bone Joint Surg., 58A: 874-877, 1977.57- Tropp H, Aakling C, Gillquist J.: Factors affecting stabilometry recordings of single limb stance. Am J Sports Med 12: 185-188, 1984.58- Trevino SG, Davis O, Hecht PH.: Management of acute and chronic lateral ligament injuries of the ankle. Orthop Clin North Am 25; 1-16, 1994.59- Sobel , Geppert M. J, Warren RF.: Chronic ankle instability as a cause of peroneal tendon injury. Cline Orthop; 296: 187-191, 1993.60- Karlsson J, Bergstein T. Lansinger O, et al.: Surgical treatment of chronic lateral instability of the ankle joint. Am J Sports Med; 17: 268-273, 1989.61- Olson EJ, Harner CD, Fu FH, Silbey MB: Clinical use of fresh frozen soft tissue allografts. Orthopedics; 15: 1225-32, 1992.62- Sammarco, V.J. Complications of lateral ankle ligament reconstruction. Clin Orthop. 2001 Oct; (391): 123-32.63- Liu SH, Baker CL.: Comparison of lateral ankle ligamentous reconstruction procedures. Am J Sports Med 1994; 22: 313-7.64- St. Pierre R: A review of lateral ankle ligaments reconstruction, Foot Ankle 3: 114-123, 1982.65- Hollis JM et al.: Biomechanical comparision of reconstruction techniques in simulated ankle injury. Am J Sports Med 1995; 23: 678-82.66- Karlson J.: Reconstruction of the lateral ankle ligaments for chronic lateral instability, J Bone Joint Surg (AM) 70: 581-588, 1988.67- Messer TM et al.: Outcome of the modified Brostrom procedure for chronic lateral ankle instability using suture anchors. Foot Ankle Int 2000; 21: 996-1003.68- Colville, M. R.; Marder, R. A., and Zarins, B.: Reconstruction of the lateral ankle ligaments. A biomechanical analysis. Am J Sports Med. 1992 Sep – 1992 Oct 31; 20 (5): 594-600.69- Karlsson J et al. Lateral instability of the ankle treated by the Evans procedure. J Bone Joint Surg -1988; 70B: 476-80.70- Snook GA, Chrisman OD.: Long-term result of the Chrisman Snook operation for the reconstruction of the laterl ligaments of the ankle. J Bone Joint Surg 67A: 1-7, 1985.71- Hoy GA, Henderson IJP.: Results of Watson-Jones ankle reconstruction for instability. J Bone Joint Surg 1994; 76B: 610-3.72- Van der Rijt, A.J. and Evans, G. A. The long-term results of Watson – Jones tenodesis. J Bone Joint Surg. 1984; 66B(3): 371-5.73- Rosenbaum, D.; Becker, H.P.; Wilke, H.J., and Claes, -L.E. Tenodeses destroy the kinematic coupling of the ankle joint complex. A three dimensional in vitro analysis of joint movement. J Bone Joint Surg. 1998; 80B (1): 162-8.المقدمةالإصابة المتكررة لأربطة مفصل الكاحل يصيب العديد من الأفراد وتترك آثار هي عدم ثبات مفصل الكاحل.وبرغم من شيوع هذه الإصابة إلا انها عادة تهمل لأن كسور العظام هي التي دائما تلفت الانتباه وأيضا بسبب عدم توافر التشخيص المناسب من (آشعة رنين مغناطيسي) ومن إصابة الأربطة.ويمكن تقسيم رابطة الكاحل إلى:1- مجموعة الأربطة الوحشية مرحلة أولى ومرحلة ثانية.2- مجموعة الأربطة أسفل القصبة والشظية مرحلة مؤجلة ومرحلة ظاهرة.3- مجموعة الأربطة تحت التالوس إلى مرحلة حادة ومرحلة مزمنة.وتعتبر أهم الطرق التشخيصية هي الطرق الإكلينيكية بالفحص وباستخدام بعض الاختبارات ثم باستعمال الوسائل التشخيصية بالأشعة والمنظار ويراعى الربط بين التشخيص الإكلينيكي والتشخيص بالأشعة حتى يتثنى العلاج المناسب.ويمكن تقسيم طرف العلاج إلى علاج تحفظي وعلاج جراحي ويراعى البدء بالعلاج التحفظي في جميع الحالات.أما التدخل الجراحي فله مسببات منها فشل العلاج التحفظي ووجود عدم ثبات دائم في مفصل الكاحل الوظيفي.ومن مميزات التدخل الجراحي هي إصلاح تهتك الأربطة وإعادتها إلى الوضع الوظيفي مع الأخذ في الاعتبار مضاعفات الجراحة.هناك عدد كبير من التقنية الجراحية لإعادة تأهيل أربطة الكاحل سواء (أحادية – ثنائية – ثلاثية) وكذلك الخياطة الجراحية

وكذلك الترقيع.كما أن المنظار الجراحي لمفصل الكاحل له دور تشخيصي وعلاجي في إصابة أربطة مفصل الكاحل.AnatomyDiagnosis