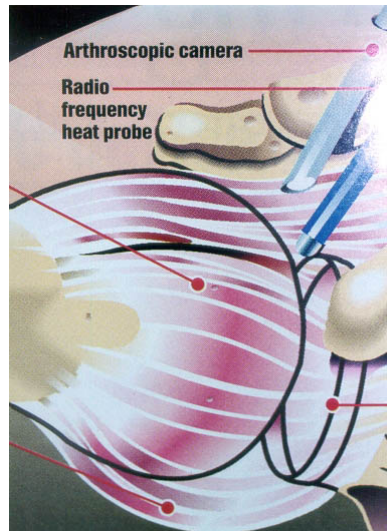




## Shoulder Electrothermal Surgery



One of the most common problems that orthopaedic surgeons deal with almost on a daily basis is shoulder instability or looseness in the ligaments which hold the shoulder in place. Medically this is termed glenohumeral instability and affects two to eight percent (2-8%) of the population. Nearly one third of all shoulder related emergency room visits are related to instability.

The spectrum of this problem includes transient partial looseness of the shoulder, which causes pain with activities to the very dramatic dislocation of the shoulder, which requires medical treatment to place the ball back into the socket. It often requires anesthesia.

Many young, active patients affected by shoulder looseness are disabled in the sense that their capacity to work and to participate in sports, or even to perform activities of daily living is compromised. These people must greatly decrease their level of activity to accommodate their shoulder problem. However, sometimes even these measures of protection for the shoulder are not enough to keep it from coming out of place.

Even the standard conservative exercise treatments employed by physical therapists may not be able to overcome the looseness in the shoulder.

A large number of open surgical procedures have been used over the years to try to keep the shoulder in the socket. These have varying amounts of success, but have usually required fairly extensive surgery and periods of immobilization followed by prolonged rehabilitation.

A new device employed in shoulder surgery called a radial frequency heat probe uses heat or thermal energy to repair the damaged ligaments in the shoulder which are excessively loose. Collagen, the major protein of the body's ligaments, responds to heat



by shrinking and tightening thereby helping to keep the ball or humeral head, as it is called, in the socket. The shoulder, which is often called a ball and socket, is really not that at all. It is more like a ball and saucer. It is much different from the hip joint in which the ball is deeply contained in a much deeper socket and surrounded by much stronger ligaments. When ligaments loosen in the shoulder, the shallow saucer-shaped socket is not very effective in keeping the ball in place.

Electrothermal surgery of the shoulder is an arthroscopic procedure which has been developed in recent years by Oratec Interventions, Inc. This company has developed instruments generally termed radiofrequency thermal devices which deliver temperatures into the shoulder joint via an electrothermal probe which cause collagen in ligaments to contract, thereby tightening the shoulder structure.

This is very different from the laser, which is used to cut, vaporize or ablate tissue. The energy delivered by the electrothermal probe is much different in that the temperatures are much lower and radio waves are used to generate heat in a very controlled fashion.

Electrocautery devices also used in surgery are different from the electrothermal probe in that they also, like the laser, lack temperature control and can damage tissue rather than simply causing it to contract.

So far the studies have been promising. Every person's shoulder problem is unique to that individual and it would be incorrect to think that arthroscopic electrothermal surgery of the shoulder can be used to solve all shoulder problems. This is a very complicated subject and there are many reasons for shoulder instability or looseness in addition to the ligament stretching that has been addressed here. It is ultimately up to the individual orthopaedic surgeon to diagnose and recommend proper management for the treatment of a shoulder problem.

In our practice we have found the Oratec device to be useful and often to save patients from having to undergo a traditional open surgical procedure.

As more experience is gained throughout the country with arthroscopic electrothermal surgery of the shoulder, we hope it will become an even more valuable tool that we can offer to patients in treatment of their particular shoulder problem.



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## **Thomas J. Haverbush, MD. P.C.**

**Office Address:**

**315 E. Warwick Dr., Suite A  
Alma, Michigan 48801  
989-463-6092  
Fax 989-463-8914**

**Website Address:**

**[www.orthopodsurgeon.com](http://www.orthopodsurgeon.com)**