

New Frontiers in Arthroscopic Surgery

Brett Casey, MP

Knee arthroscopy is an extremely common procedure performed by nearly all orthopedic surgeons on a routine basis. The procedure is performed with the leg in varying positions; some surgeons prefer to sit while others stand. Many surgeons utilize a leg holder to provide restraint while inspecting the medial and lateral compartments of the knee. Knee restraints/leg holders provide excellent assistance while performing surgery versus the figure-4 technique.

There are some problems associated with the use of conventional leg holders. Many varieties have numerous parts that must be assembled on the table in order to utilize the restraint. Multiple parts can result in misplaced components, which lead to delays or inability to utilize the device. Many other leg holders are large and bulky, making them difficult to set up. Large leg holders are also difficult to remove during the case should the circumstances dictate removal intraoperatively. Some leg holders limit mobilization of the leg, impeding complete examination of the knee in some cases. Finally, knee holders must be available in different sizes to accommodate different sized legs.

Over the past few months, a new type of leg restraint has been available for evaluation for arthroscopic knee procedures and minimal total knee arthroplasty. This restraint is lightweight, easily attached to the side of the operating table, and attached to the leg with ease and minimal assistance. The 1.5 pound leg restraint fits various sized legs, is not bulky, has only one piece with no moving parts and is extremely strong, radiolucent and disposable.

A single surgeon at one hospital performed a total of one hundred sixty-six cases. One hundred forty-eight cases were knee arthroscopy and eighteen cases were ACL's. Eighty-five male patients and eighty-one female patients were treated. Diagnoses varied from medial meniscus tears, lateral meniscus tears, OCD, and arthrofibrosis of the knee. These procedures included medial meniscectomy, lateral meniscectomy, tibia repair, arthroscopic OATS, ACL, and synovectomy. This leg holder was applied as mentioned below. Most (not all) cases were performed while the surgeon was sitting. A tourniquet was applied proximal to the knee and the leg holder was placed directly over the tourniquet, which was a first because it cannot be done with any other available brace. All procedures done in this unique way were successful. Standard sterile technique was utilized. Areas of the knee visualized were the suprapatellar pouch, patella femoral joint, lateral and medial gutters, medial compartment, notch and the lateral compartment. All procedures deemed necessary at the time of surgery were performed with the restraint in place

The leg restraint is attached to the side of the operating table, using a universal clamp on the attachment bar of the table. A rolled towel is placed beneath the leg in the area of restraint placement. This requires only one person to accomplish due to the lightweight nature of the restraint. This restraint incorporates a bladder, which is inflated to 150 mm hg using a standard operating room tourniquet monitor. The bladder is not necessary if the restraint is placed directly over the tourniquet. The bottom of the bed is dropped at the knee break and the leg is then prepped and draped with minimal encroachment of the restraint due to its compact nature. The procedure is easily performed applying maximal varus and valgus stress to visualize the medial and lateral compartments. The restraint held up to vigorous strain during all cases performed. The lateral compartment could easily be visualized, even for a surgeon who normally uses the figure-4 technique to see in the lateral compartment. The restraint did equally well with sitting and standing arthroscopic technique.

In short, the restraint performed remarkably well and is easy to use. The restraint provides maximum knee joint exposure for better access and repair results, which cannot be obtained by other restraint methods. It is light weight yet durable despite many attempts to dislodge the brace during trial use. Because of the design simplicity, the operating room staff rapidly became accustomed to its use, as did the surgeon. The restraint also did not get in the way during any case, which can sometimes be an issue. The restraint will be an excellent addition to any operating suite and add to the efficiency, safety and success of the procedure and a welcome replacement to the figure-4 or the bulkier traditional leg holders that are currently utilized.

**Brett Casey, MD
TGMC, Houma,
LA**