In the United States, a club foot deformity (known as congenital talipes equinovarus) in a baby or young child is treated quite successfully. A special treatment technique called the Ponsetti method is used with good to excellent results.

But in Third World or developing countries, such foot deformities may not be treated at all or inadequately treated. The result is a rigid, deformed foot and ankle. Often these children cannot walk, squat, or even wear shoes to protect their feet.

In this report, surgeons from Abu Dhabi capital city of the United Arab Emirates (UAE) on the Persian Gulf describe their attempts to correct this neglected foot deformity in nine children over the age of six. They treated a total of 11 feet using a combination of staged surgeries, traction, and a device called the Taylor spatial frame (TSF). They report that these rigid foot deformities in older children can be safely and successfully corrected with this treatment approach.

Before planning the surgery, a complete assessment of each child was done. The foot was examined carefully to look for flexibility and correctibility. Tendons and ligaments were evaluated for shortening or contractures (fixed and unable to stretch or move). X-rays, CT scans, and MRIs were examined to look for bone or joint fusions.

Each of the children in this study was able to walk but that actually contributed to the problem. By putting weight on the deformed feet, further malformations developed along with callouses and injuries. All of these factors were taken into consideration when planning each step of the corrective surgeries.

Surgical procedures performed included soft tissue releases of contracted ligaments, tendon lengthening, tendon transfers, bone osteotomies, and limb lengthening. The authors provided before and after photos for some of the children to help show the benefits of the treatment with surgery, traction, and the Taylor spatial frame.

For most of the children, it was necessary to make corrections carefully by using slow, gradual, steady traction to provide an additional three-dimensional force. A special computer program calculated exactly how much force could be applied to the foot following surgery. The Taylor spatial frame made it possible to start with just 30 per cent surgical correction of the bones. By providing a slow change rather than a sudden shift in anatomical alignment, damage could be avoided to the nerves and blood vessels in the area.

After surgery and one week of traction, the lower leg was kept in the Taylor spatial frame. That made it possible to avoid using a lower leg cast, thus maintaining good blood circulation and nerve function that was easy to monitor.

Some children could go home with their families and continue the treatment under adult supervision. For other children, a six-week hospital stay was required to complete treatment in the frame. The children were allowed to walk wearing the Taylor frame. When the foot and ankle were fully realigned, the child was transferred from the frame into a lower leg (walking) cast for an additional month. The cast was designed to help maintain the improved alignment.

The surgeons summarize this report by saying that it is possible to salvage rigid foot deformities from untreated or poorly treated (severe) clubfoot. The three-prong approach they shared with staged-surgeries, traction, and the use of the Taylor spatial frame is a safe and effective way to treat fixed foot deformities in
children over the age of six. The Taylor frame is an essential key in making the anatomic corrections slowly enough to avoid problems while restoring limb length.