



Russians Devise Technique for Lengthening Limbs

by Dr. Rock Positano

Daily News - October 17, 1999

Spotlight on Health

Special to the Sunday News

People whose limbs are short — either because they were born that way or because of amputation or accident — can get longer and better limbs thanks to a Russian procedure.

The method was devised in Russia because of horrific numbers of injured World War II veterans whose legs and arms refused to mend properly. The bones failed to "knit" or bind together end to end.

Medics attached rods to the limbs and told the affected patients to compress the bone ends together. This worked very well for shortening the fractured limb and rejoining the parts. But when a patient did the procedure the wrong way, it lengthened the joined ends, doctors discovered.

"Russian physicians noticed that new bone had formed in the gap between the bone ends," said Dr. Robert Rozbruch, an expert in limb-lengthening surgical procedures at the Hospital for Special Surgery in Manhattan.

"This was beginning of much research and development that showed that limb lengthening was possible, safe and effective."

Rozbruch said limb lengthening and reconstruction techniques can be used to replace missing bone and lengthen and/or straighten deformed bone segments. These procedures may be performed on children and adults who suffer from birth defects, disease or injury.

The limb lengthening and deformity correction process involves gradually pulling apart bones that are cut in surgery, leading to new bone formation.

It is possible to lengthen bone segments from 15% to 100% of their original length. Rozbruch adds that the regenerated bone is normal bone and does not wear out. "The muscles, nerves and blood vessels grow in response to the slow stretch as they do during a growth spurt or in pregnancy," he said.

Surprisingly, limb-lengthening procedure are minimally invasive and usually require a one-

or two-night hospital stay. Patients do not experience great pain and discomfort afterward. The majority of patients can continue to walk during the treatment.

Who can benefit? Anyone with arm or leg length differences, even with one abnormally long limb and average (normal) limb. The procedures can also help those with birth defects such as dwarfism, fibular hemimelia, congenital short femur and congenital limb shortenings.

Everyday trauma, such as an accident injury, can lead to growth-plate fracture that can result in limb length differences. A segment of bone can be missing after a bone tumor, infection or severe fracture. New bone can be transported to fill in this defect or gap.

Dwarfs suffer from not being able to reach phones, toilets and gas pedals. With the new procedure, "We have been able to lengthen achondroplastic dwarf patients 12 inches in the leg and 5 inches in the arms," said Rozbruch. This procedure renders people more functionally independent.

Initially, there was much resistance and skepticism about this technique from the orthopedists in this country. However, it has proven to be very powerful and effective procedure, especially when performed by surgeons with special training.