

BOA ZIMMER TRAVELLING FELLOWSHIP TO KURGAN, RUSSIA

EXECUTIVE SUMMARY

This Fellowship was spent at the Russian Ilizarov Scientific Centre for Restorative Traumatology and Orthopaedics in Kurgan, Russia, where in the last century, Gavriil Abramovich Ilizarov discovered and applied the principle of 'tension-stress.'

I aimed to gain experience of this method in a high volume centre, understand the scope of its application, meet surgeons from a variety of international backgrounds, gain historical perspective in an area of interest to me and ultimately use this to benefit patients in the UK.

This was a 4 week structured Fellowship that was comprised of theatre time, case discussions, lectures and workshops with Saturday mornings reserved for sawbone work. There was the opportunity to scrub in and assist with cases in theatre.

Surgeons were extremely experienced with techniques and circular frames were applied efficiently with a heavy reliance on knowledge of anatomical landmarks over intra-operative radiography. They were supported by a multi-disciplinary team, with patients often staying at the centre for their entire duration of time in circular frame, giving them access to optimised nursing care and rehabilitation.

The pathology observed was varied and included traumatic and elective conditions in both the paediatric and adult population. Examples included limb lengthening, non-union surgery, acute fracture fixation in the upper and lower limbs, the management of the diabetic foot and bone infection. Whilst the majority of the work performed at the centre uses the Ilizarov apparatus, internal fixation is available for certain cases, as is joint replacement surgery.

In summary I felt that my objectives for going were achieved and also that the visit took place at the right time as I had attained CCT and had Fellowship experience in this technique prior to the visit. I would like to thank the Ilizarov Scientific Centre for hosting me and also the BOA for the generous award of the Zimmer Travelling Fellowship.

FULL REPORT

I chose to complete a Travelling Fellowship at the Russian Ilizarov Scientific Centre for Restorative Traumatology and Orthopaedics in Kurgan, Russia. The centre is famous for the work of Gavriil Abramovich Ilizarov, who in the last century discovered and applied the principle of 'tension-stress' in the management of orthopaedic conditions.

My aims were to gain experience working in a high volume centre specialising in this technique and to understand the possibilities and scope in how it could be applied. Various mentors during post-CCT Fellowship training had recommended the visit to me and it was also an opportunity to meet surgeons from a variety of international backgrounds and gain some historical perspective on a technique of significant interest to me. This was with the ultimate aim of benefitting patients here in the UK.

This was a 4 week structured mini-Fellowship which is held by the centre during various months of the year. It was comprised of theatre time, case discussions, lectures and workshops and ran from Monday to Friday with Saturday mornings reserved for sawbone work. There is the opportunity to scrub in and assist with cases. The program is open to surgeons from all over the world and on this occasion I was joined by a colleague from India.

There was no shortage of Ilizarov apparatus in every department which greatly facilitated the ability to perform frame adjustments whenever needed. This was helped by the presence of the Experimental Plant which

manufactured the components on site. Dedicated technicians were also available to dismantle frames for re-use of some of the apparatus.

There was a multitude of general learning points and observations to be made. The majority of theatre cases were performed under regional / spinal anaesthesia, including those of the upper limb. Skin preparation was performed using alcoholic (70%) chlorhexadine which was abundantly available and which was regularly applied by the scrub nurse during the case to both the skin and the apparatus. The scrub nurses also had a good understanding of the assembly of the apparatus and would often pre-empt the surgeon's next step.

Most of the procedures were performed by two experienced surgeons working efficiently together who could really demonstrate the versatility of the Ilizarov apparatus by having an engrained understanding of how to assemble components in a variety of different situations. Surgeons would heavily rely on anatomical landmarks when inserting wires and had confidence in their knowledge of the safe anatomical corridors. Whilst C-arm fluoroscopy was available, this was not often used. Instead, check radiographs using films and cassettes would be performed near the end of the procedure.

The pathology observed was varied and included traumatic and elective conditions in both the paediatric and adult population. Examples included limb lengthening, non-union surgery, acute fracture fixation in the upper and lower limbs, the management of the diabetic foot and bone infection. Whilst the majority of the work performed at the centre uses the Ilizarov apparatus, internal fixation is available for cases such as extracapsular proximal femur fractures and deformity correction in cerebral palsy. Joint replacement is also offered at the centre.

Patients often remain at the centre as inpatients during lengthening and deformity correction and sometimes for the entire period of treatment in frame. This gives them access to optimised medical care, nursing care and rehabilitation. Frame removal is most commonly performed under intramuscular tramadol on the ward.

Most of one of the weeks was spent at the Bone Infection Centre under the supervision of Professor Klyushin. This is isolated from the main hospital and has 3 departments (long bone, prosthetic and spinal) each with capacity for 45 patients, with plans in place to open a separate department for diabetic foot infection. Specific teaching was provided on areas such as the prevention and management of pin site infection, techniques of bone transport in managing osteomyelitis and some interesting research into the effects of the Ilizarov frame in boosting the bactericidal activity of tissues.

Part of the program involved a visit to the Ilizarov museum which is located on site. A guided tour was made available to us in which the history of the centre was described. This was also a good opportunity to see the widespread applications of the Ilizarov technique as well as some creative assemblies of the frame.

We were warmly received at the centre and met with the director, Dr. Alexander Gubin, at the beginning and end of the placement (see photo). We were assigned a teaching programme supervisor, Dr. Karasov, whom we met with regularly and to whom requests for teaching on specific areas could be made. The majority of the local surgeons cannot speak English and hence interpreters from the International Department at the hospital accompanied us throughout the day to translate, including in theatre. Friday afternoons were when the weekly hospital meetings took place in which cases from the individual departments were presented. Visiting surgeons from overseas are encouraged to present work from their own institutions during this session.

Although the principles established by Ilizarov are still applied today, surgeons at the centre do have their own individual preferences and variations in technique as with any type of surgery. It was also excellent to see the confidence and respect that the patients had in the staff and the centre and also their compliance with treatment, with many attending from all around Russia. This is important in achieving success with any treatment method. Although it is not possible to apply everything observed at the centre to the UK healthcare setting, such as long inpatient stays while in a frame, it did emphasise the importance of the multi-disciplinary team in the limb reconstruction setting and how this is important in optimising the outcome from treatment.

In conclusion I felt that my objectives for attending the centre were achieved and also that this visit took place at the right time as I had attained CCT and had Fellowship experience in this technique prior to going. I look forward to applying what I have learned as a Consultant in this speciality. I would like to thank the Ilizarov

Scientific Centre for hosting me and also the BOA for the generous award of the Zimmer Travelling Fellowship.



Figure 1 - The principle of tension-stress, here described on the Ilizarov memorial

Figure 2 - A creative assembly using the Ilizarov apparatus

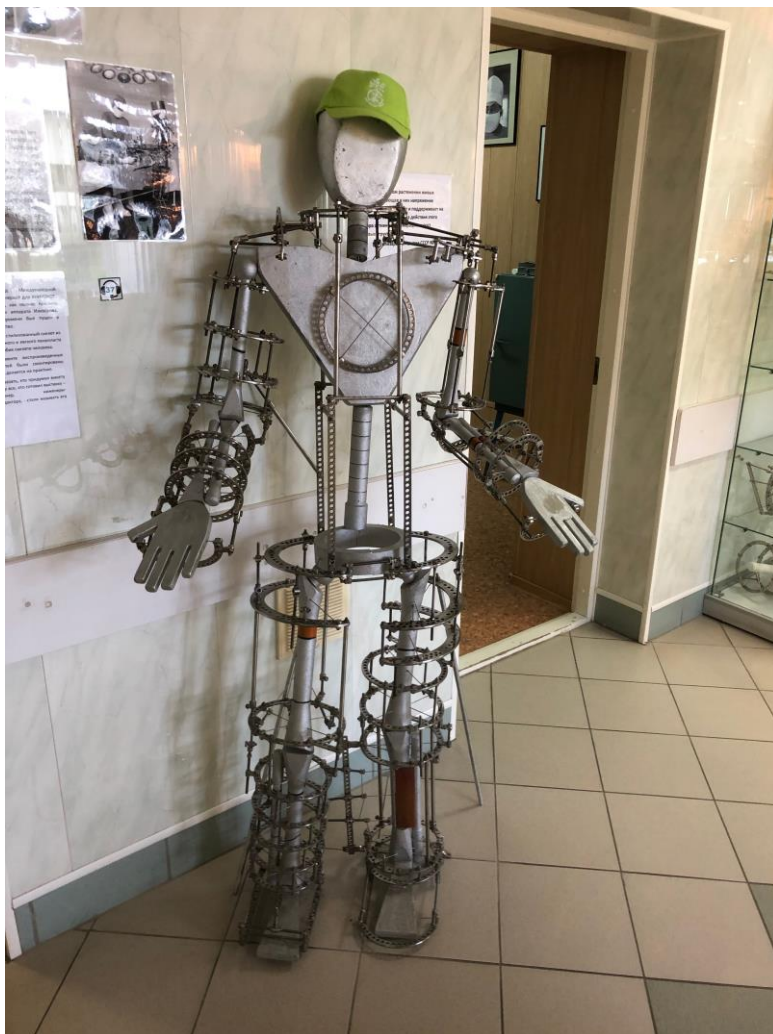


Figure 3 - The office of Professor Ilizarov, with colleague Dr. Rajiv Kaul (left) and director Dr. Alexander Gubin (centre)

