NIHR | Trauma Management MedTech Co-operative

0003

CASE STUDY

BONE SCRAPER:

INTRA-MEDULLARY BONE SCRAPER FOR USE IN POST-TRAUMATIC LONG BONE OSTEOMYELITIS

platts+Nisbett

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PROJECT SUMMARY

The NIHR Trauma Management MedTech Co-operative (Trauma MIC) collaborated with a University Hospitals Birmingham NHS Foundation Trust (UHB) - based orthopaedic surgeon (Miss Deepa Bose), and a fellow clinician (Dr Simon Williams), to develop a novel intra-medullary bone scraper for use in post-traumatic long bone osteomyelitis.

CLINICAL NEED

The incidence of osteomyelitis has been estimated at 2.4 cases per 100,00 with the incidence rate increasing with age.[1]

Upon first engagement with Miss Deepa Bose (2013/14), it was discovered that existing surgical tools used for procedures to remove infected matter from the bone were too rigid and straight. These constraints made access to the bone cavity and the removal of infected matter challenging.

THE SOLUTION

A new surgical device featuring adjustable hinges was developed, allowing for extra dexterity when working inside bone cavities, making the procedure quicker and more effective. This more efficient removal of infected matter helps to reduce infection recurrence rates, leading to better outcomes for patients receiving such surgical interventions.

HOW WE SUPPORTED

The Trauma MIC assisted with:

- IP protection of the product
- Prototype production and liaison with the UK manufacturer to produce the final CE marked product
- Filming of a usability study to help compile a case study

OUTCOME

The contribution of the Trauma MIC led to the device being manufactured by the Sheffield based SME, Platts & Nisbett Ltd.

The bone scraper is now on sale internationally and will contribute to the more efficient removal of infected matter with patients suffering from osteomyelitis.

No further research has been conducted with this device; however, the Trauma MIC remains open to further surgical tool ideas after this success.

REFERENCES

[1] Hochberg, M.C. & Silman, A.J. & Smolen, J.S. & Weinblatt, M.E. & Weisman, M.H. (2014) *Rheumatology E-Book*: Elsevier Health Sciences. p. 885.

PROFILES

PLATTS & NISBETT was founded in 1977, and remains an independent company, based in Sheffield, which is fully owned and managed by the Nisbett family.

They are renowned for the manufacture of high quality surgical instruments for a customer base ranging from the NHS to private sector hospitals to decontamination units.

They supply distributors within the UK and internationally.

MISS DEEPA BOSE, MBBS, FRCS, FRCS (TRAUMA & ORTHOPAEDIC) CONSULTANT IN TRAUMA AND ORTHOPAEDICS

Completed her Welsh orthopaedic training rotation and was part of a limb reconstruction fellowship in Oxford.

Based at UHB, research and clinical interests include complex lower limb trauma, bone infection, non-union, malunion and fractures with bone loss.