

Minutes of Spinal Cord Injuries SIG meeting on 24.6.19

Venue: Stewarts Law's office

Intro and Welcome speech by Hugh Johnson (Stewarts Law), Group's Coordinator

APIL' update by Hugh Johnson

- Quick reminder – new CEO Mike Benner takes up his post on 1 July. Mike has almost 15 years' experience as a CEO for not-for-profit membership organisations, most recently with the Society of Independent Brewers (SIBA) and before that at CAMRA. He is an experienced campaigner and strategist and familiar with the challenges of dealing with change and ensuring an organisation's resilience for the future.
- Discount Rate - Lord Chancellor started discount rate review 19 March – must conclude by 5 August. We still don't know when the new rate could be implemented after that.
- Fixed costs consultations – APIL's response to the consultation is that cost management and budgeting is the appropriate way to manage costs, not fixed costs. APIL argues for "intermediate track" for cases meeting specific criteria – part of Jackson recommendation and this should be followed through. APIL campaigning for indemnity costs in respect of part 36 offers as an important tool to control defendant's conduct.
- DoH and social care consultation for appropriate clinical negligence cover. APIL's response is that with discretionary indemnity cover, we are running the risk of under compensating or not compensating the injured. This is a significant concern. The consultation has now closed. State backed indemnity scheme for all healthcare professionals providing NHS services is the answer (not just for GPs). APIL will be pressing for proper insurance for consultants and private hospitals. Proper legislative change is needed to avoid situation as with Mr Paterson. Unlimited cover and run-off cover is needed. The Government will publish a summary of responses to the consultation (which closed in February) before any further action is taken.

Brief intro by Alex Dabek (Bolt Burdon Kemp), Group's Secretary

Dr Colin Shirley – consultant neurophysiologist on spinal cord monitoring and some aspects of upper limb rehabilitation following a spinal cord injury– see the PowerPoint presentation attached

- Spinal anatomy
- spinal cord not good at deriving new blood supply
- Loss of one blood supply will have impact on the spinal cord -even for small vascular lesions
- Potential sites of injury - Spinal nerve roots- Severity depending on severity and level of injury
- Cauda equina – lumbar region, base of the spinal cord - If lesion at L2 then lose function in the levels below

MatterNo

- Categorising procedures: 1) Disc bone surgery, 2) Spinal deformity major surgery (also Listhesis surgery – to fix splits), 3) Intra dural pathology – tumour inside the sack or on the surface of the spinal cord – possibly operating inside the spinal cord – very complex
- Does not need spinal cord monitoring for bony decompressive surgery - We do not tend to monitor these cases
- Deformity and listhesis surgery – good evidence showing has significant on reducing neurological deficit
- Wake up test – you only get one or two chances with this
- Wake up test not an ideal test
- Spinal cord monitoring is a game changer for scoliosis surgery
- If monitoring alerts, one removes rods to untwist spine, de-rotation of the spine– may be enough to restore the function. Also can increase BP. Ultimately one can stop the procedure for the cord to have some rest. Can come back at a later stage
- More damage to the spinal cord if one continues. Best to come back second time round if monitoring shows concerns.
- With Intradural spinal pathology, there is less of an evidence base to show it is beneficial
- More difficult to prove with high quality trials
- Far less common disease so difficult to have studies for this
- Clin neg sphere – not enough data to show it should have been used
- For clin neg lawyers to argue that it should have been used? Lots of discussion going on around this
- What do you do with intradural surgery if you have dissected wrong bit, no going back. So harder to undo/reverse
- Types of monitoring
- Sensory fibres monitored with SSEP
- It records the time it takes for the signal to run from one point to the other if delayed then that alerts the surgeons - 14 milliseconds – for the signal to travel and could be even shorter
- Can encounter technical problems - if anaesthetist has given wrong anaesthetics
- Motor evoked potentials – (MEP) second type of monitoring. Stimulates over the cortex – goes down at the front of the spine. Records usual time travel period
- Monitors motor responses and if smaller than usual then says something is wrong. Opportunity to intervene
- Different criteria on when surgery should be stopped – assuming surgeons listen
- Pedicles screw monitoring – to avoid going too far and not breaching the pedicle wall
- Not often used – for scoliosis surgery
- Thin bones – stimulation of neuro-structures– not without problems
- Intraoperative CT is a good alternative to pedicle screw monitoring

- D-wave monitoring (another type) records over the top or underneath the dura
- continuous signal being sent
- patient does not jump so better
- Neuro monitoring alerts - increase in travel time, decrease in the size of response
- can't be too sensitive as would mean stopping far too many ops
- but if not sensitive enough could miss the deficit. The right balance is needed
- which one should be used – jury is out
- pitfalls - a lot of interference – may mistake for genuine response
- with elective scoliosis case. better to come back another day
- sad cases where people have ploughed on
- issue of consent
- if monitoring ineffective is consent valid?
- with children – you can ask the parents about this – so can pop out from the operating theatre
- other issues: to be sensitive but not over sensitive. Important to consider all the data. poor communication during the op. different objectives
- no nationally agreed training programme for this
- no formal assessment process
- little consultant oversight
- no statutory register of people undertaking spinal cord monitoring
- just broad guidelines – beyond that no formal guidelines and when we should be using and what exactly
- risks of spinal IOM
- small risk of intra op seizure- 1 in 1000
- Tongue bit injury – patients should be consented to those risks
- **SECOND TOPIC – ROLE OF PERIPHERAL NERVE TRANSFER SURGERY**
- Brachial plexus
- EMG to work out what is going on with peripheral nerves
- Preferred method compared to an MRI scan
- Fracture in the wrist – to find the site of the lesion
- Loss of use of one arm – f. ex. brachial plexus
- Way to repair nerves at these levels
- Can find the location and help with pre-op planning
- To regain function in the arm
- Considering this for SCI – tetraplegia
- Need to rely on the nerves that are working
- Functional impairment for upper limbs
- Real issue for tetraplegic patients
- Tendon transfers
- Will give a crude grip not an elegant grip

- It needs to be above the injured lesion
 - Goal settings is important
 - Need to be realistic about what can and can't be achieved
 - Relates to upper limb function only
 - Peripheral nerve surgeons
 - Review with physio and OT
 - To start planning. To see what is working and what may be donor site
 - Patients to be advised of potential for failure
 - Not formally funded through NHS
- Muscles over-contract over the level of injury
 - Real problem for restoring function
 - Can become more spastic?
- Nerves will propagate – a millimetre a day
 - Can do finger flexion
 - If no pincer grip – good benefit
- Funding is not easy – complaints /appeals
- Dependent patient
 - A lot of surgery
 - Elegant surgery
 - Technical challenge
 - Case example – patient did extremely well from that
 - Restored function
 - He was like a totally different person. Also psychologically
- Encouraged by this
- Question re spinal cord monitoring and how often procedures are stopped.
 - Answer: Some do get stopped. QEH – busy centre. Several a week?
 - Question re rehab. Client underwent intensive rehab some time after injury and now able to feed herself. Tetraplegic. She has not been through these 7 operation you have been talking about. What's the benefit?
 - Answer: would not advocate this procedure in the acute phase of rehab. She was 4 years down the line but likely to have been in the minority with such miraculous recovery 4 years after injury. Any other trauma? If polytrauma – presumptive body can't heal everything in one go so takes time and in that case understandable why took longer. First to go through conventional rehab. She was at the Wellington – a bit of kit. Not sure what. Difficult question to answer as to the stage when you intervene this way. Has to be carefully considered.
- Question about pedicle screw monitoring. When used?
 - Answer: What is a meaningful breach – 1 in 20 of screws a bit of bone breach. Won't necessarily be a meaningful breach. But if serious then should consider. You have caused the injury – will not be of benefit if breached the cord by inserting the screw. Intra operative CT is better
 - Question: How many centres for the nerve transfer ?
 - Answer: not many places. It is a very elegant surgery. challenging thing. Stanmore. Warrington. Leeds? There is a few centres but with programme that reviews systematically – only QE in Birmingham as far as he is aware

AD introducing Lynn Vale, FES specialist. Application of FES including practical demonstration – see PowerPoint attached

- Origins of neurostimulation
- Lesion of CNS

- Problems in the SCI population: Lacking range of movement – to maintain joint range. Spasticity – abnormal tone. Gait abnormalities. Bone mineral density. Pain
- Applying NMES
- To have therapeutic effect and neuro-prosthetic effect. Two goals

- Videos of patients using FES. engaging quads and glutes to enhance standing

- FES for For upper limb
- To stabilise to get the muscle tone to control the function. Otherwise not stable
- To think about secondary complications to ensure correct joint alignment when walking
- Question: How long to tolerate for’?
- Answer: You can use for the whole day

- Can treat many more muscles group at the same time
- Fitness regime. To maintain range of movement – knees and hips
- Synced to a gait pattern
- Same timing as you would get with your gait
- Want to bulk up the muscles
- To increase muscle tissue
- To help reduce secondary complications
- FES cycle - 45 mins to 1 hr
- Muscles can still generate that power
- Tetras can use this
- To have more stability backwards
- FES cycle: gives good feedback. Has graphs. To measure outcome. To see the progress of the patients
- If Contractures – will not be able to do much about this
- Practical demonstration

Meeting concludes.
Drinks and networking