Kidney donation after circulatory death; an opportunity to expand the donor pool

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Introduction: Donation after circulatory death (DCD) is the process by which organ donation occurs after death is declared by cardio-respiratory criteria, as distinct from patients who meet the neurologic criteria for donation after brainstem death (DBD). Organ donation in this circumstance poses ethical and technical challenges for both patients and doctors, but has the potential to be successful with careful donor and recipient selection.
Methods: We performed a retrospective review of all kidney transplants after circulatory death in our centre from the beginning of the programme in 2011 to 2018, and compared this group to transplants from DBD donors during the same period.
Results: From 2011–2018 we performed 62 kidney transplants from DCD donors. 37% of DCD transplants had delayed graft function, compared to 18% of DBD transplants ($p = 0.002$). Mean creatinine levels at 1 and 3 months post transplantation were 185 μmol/L and 146 μmol/L for DCD transplants, compared to 135 μmol/L ($p < 0.0001$) and 125 μmol/L ($p = 0.03$) for DBD transplants. At one year post transplant, mean creatinine level for DCD transplants was 124 μmol/L, compared to 119 μmol/L for DBD transplants ($p = 0.29$). There was no significant difference in graft survival or overall patient survival ($p = 0.17$) at 1 year.
Conclusion: DCD transplants have higher rates of delayed graft function, but long-term outcomes are comparable with DBD transplants. Thus, donation after circulatory death has the potential to increase the number of organs available for transplant, and is a viable option with experienced ICU and transplant teams and newer developments in organ preservation.

Bladder dysfunction in Down's syndrome

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Introduction: The non-neurogenic neurogenic bladder (NNB) has been recently described in patients with Down's Syndrome (DS). Our aim was to report the incidence, demographics, presentation, complications and management of DS patients with NNB.
Methods: A systematic review was performed using PRISMA guidelines and search terms "(((trisomy 21) OR down's syndrome)) AND ((‘non-neurogenic’) OR voiding dysfunction)" in the search engines MEDLINE and SCOPUS. We also include a case series from two paediatric urology centres.
Results: A total of 48 patients with NNB and DS were included, of which five were from our series, the pooled incidence of this syndrome in DS is 26%. Mean age was 14.75 years (newborn to 42 years), the male to female ratio was 2.2:1. Functional constipation was present in 77%, recurrent urinary tract infections, including febrile infections and urosepsis in 51%, 80% of these had renal insufficiency at presentation and 40% patients required surgical intervention. Medical treatment and behavioral modification was successful in over half the patient while intermittent catheterization was less successful. We provide a pragmatic management flowchart for this condition.
Conclusion: This is the largest cohort of patients with NNB in DS. This condition is not uncommon and can have potentially serious consequences requiring operative intervention. Early identification and management of this condition is imperative to protect the renal tract, whilst screening for urogenital anomalies in DS is currently not performed, we recommend at the very least a thorough history of bladder function in all DS patients is necessary to identify these cases early.

Sacral neuromodulation in urology: early Irish experience

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Introduction: Sacral neuromodulation is an established treatment for voiding dysfunction. Indications include refractory over-active bladder and non-obstructive urinary retention. The aim of this study was to summarise our early experience with the sacral neuromodulation and assess patient outcomes.
Methods: A prospective database was maintained of patients who underwent sacral neuromodulation using the InterStim™ II system (Medtronic, Minneapolis, MN, USA) by a single surgeon between March 2017 and March 2019. Data recorded included patient demographics, pre-op ICIQ-OAB questionnaire scores and operative details. Patients who subsequently went on to have a permanent device inserted and who still have this device in situ were contacted by telephone and an oral questionnaire was carried out including a post-operative ICIQ-OAB score.
Results: During this two year period, 39 patients underwent a trial stage of sacral neuromodulation with InterStim™. Nineteen patients underwent percutaneous nerve evaluation (PNE) and twenty patients underwent a trial with a tined lead. Eighteen patients (46.1%) subsequently proceeded to implantation of a permanent device. Two patients (11.1%) underwent device explantation secondary to pain ($n = 1$) and infection ($n = 1$). Those undergoing the procedure for refractory overactive bladder had the best outcomes with 78.5% reporting a significant improvement in their symptoms post implantation of permanent InterStim™. The mean ICIQ-OAB score post-op was 6.6 (range 0–12).
Conclusion: Sacral neuromodulation is an effective tool for managing refractory voiding dysfunction. Careful patient selection is necessary and management of patients' expectations is essential to successful outcomes.

Use of the SF Qualiveen questionnaire to monitor treatment response in Neurourology patients

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Introduction: Neurourology accounts for 10% of a general urologist's workload. Appropriate follow up of neurourology patients is paramount to preserve renal function, ensure upper tract integrity, continence and optimise quality of life. Questionnaires such as the IPSS and the IIEF 5 are widely used in urology. Specific to neurourology the SF Qualiveen questionnaire has been developed to monitor symptom progression in neurogenic bladder patients.[1] A total of 4 domains are assessed: Bother with limitations, fears, feelings and frequency of limitations.
Methods: A pilot study of patients attending a dedicated neurourology clinic was performed. For each patient SF Qualiveen scores were

recorded at baseline and again following a treatment or change in catheter management in order to detect treatment response or symptom progression.
Results: A total of 20 patients were included with the following conditions: spinal tumours 2, Multiple sclerosis 5, spina bifida 5, transverse myelitis 1, cauda equina 1 & spinal cord injury 6. The mean SF score at initial assessment was 2.66 and following treatment was 2.29. A total of 17 patients showed improved scores, 2 showed no changes and only 1 had a disimprovement on repeat scoring. The mean difference in scoring was 0.38 (0–2.75). The greatest change was noted in a spinal injury patient fitted with a different long term catheter and a cauda equina patient who initiated intermittent catheterisation recorded an increased score.
Conclusion: The SF Qualiveen questionnaire is a useful adjunct when monitoring symptoms in neurogenic bladder patients and is now routinely used in our unit.[2]

References

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Evaluation of an Ex-Vivo Model of Catheter-Induced Trauma of the Paediatric Urethra using Porcine Tissue

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Introduction: We proposed a juvenile porcine model to mechanically and pathologically evaluate catheter balloon inflation pressure and diametric strain thresholds associated with risk of urethral injury in paediatric patients.
Methods: Serial inflations of paediatric catheter balloons were performed in air as representative of intra-vesical inflation pressures. Juvenile porcine urethras (n = 13, age 4–12 weeks) were harvested from an abbatoir and calibrated for size. 9 cm segments of urethra were mounted over 8 Fr and 10 Fr catheters on a custom-designed experimental apparatus. The catheter balloon was inflated in the post-prostatic urethra and pressure and diametric changes were recorded via a pressure transducer and video extensometer. Scanning electron microscopy (SEM) and histological analysis were performed on control and balloon-inflation segments.
Results: Typical balloon inflation pressures in air using paediatric catheters were ≥300 kPa. Mean resistance to balloon expansion of 8 and 12 week-old urethral samples was 64 kPa and 42.21 kPa respectively. Diametric strain ≤20% was observed using 3 ml and 5 ml balloon inflation volumes in 8 Fr and 10 Fr catheters respectively. SEM and histological analysis demonstrated early tissue injury of the porcine urethras following intra-urethral balloon inflation.
Conclusions: Juvenile porcine urethras produce pressure differentials significantly lower than adult porcine/human models. Knowledge of such pressure differentials are crucial for developing mechanisms to safeguard against catheter-related injury in paediatric patients.

Immediate penile prosthesis for the management of ischemic priapism

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Introduction: Ischaemic priapism is the commonest form of priapism. Prolonged ischaemia is associated with smooth muscle necrosis and cavernosal fibrosis. Acute prosthesis implantation aims to treat the priapism and the inevitable erectile dysfunction.
Methods: A review was carried out of all patients who underwent surgical intervention for priapism between 2016 and 2019. Data was collected using theatre logbooks and patient records. This study included all patients who underwent insertion of a penile prosthesis for ischaemic priapism during their initial presentation.
Results: In total, six patients underwent insertion of a malleable penile prosthesis during their initial presentation. All six were delayed presentations with a mean duration of onset of 41 hours. Five presented with drug-induced priapism and the sixth, with priapism secondary to malignancy. The patients were aged between 37 and 63 and self-reported good erectile function prior to admission. Prior to prosthesis insertion, other treatments trialled without success included aspiration, intracavernosal phenylephrine and shunt procedures. Corporal biopsies were taken to document smooth muscle necrosis and ischaemic priapism. Two patients have proceeded to insertion of a three piece inflatable prosthesis. Two other patients are awaiting this surgery. The final two declined further surgery. All six patients are sexually active. There have been no complications to date as a result of their surgeries.
Conclusion: Ischaemic priapism is a rare disease and management is dependent on early presentation. In patients who present late, conservative management is typically unsuccessful. In these patients early referral to a subspecialist centre for implantation of a penile prosthesis should be considered in order to treat both the priapism and optimise subsequent erectile function.

Patient reported outcomes in reconstructive penile surgery for Peyronie's disease

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Introduction: Reconstructive penile surgery can have significant benefits to men with conditions leading to penile curvature including Peyronie's disease. Oftentimes these men have voiding or sexual sequelae from their diseases and can be markedly affected by them. Similarly, the interventions offered can also have significant impact on their lives, though these are seldom reported. Patient reported outcome measures (PROM) are a method of recording the outcomes that matter to patients and can be applied to surgical procedures. We aimed to review the patient outcomes from our cohort of penile reconstructive patients.
Methods: Patients that underwent a penile curvature surgery at our institution between January 2017 and December 2018 were invited to complete previously-published PROM survey. Results were collected and compared with surgical techniques used.
Results: 24 patients underwent surgical procedures (15 Nesbitt procedures, 6 16-dot procedures, 2 Leus procedures and 1 Yachia