Wednesday 29 June 2016
ePoster Session 9; 1430 – 1530 Room 12
HISTORY OF UROLOGY
Chairs: Jonathan Goddard & Nick Gill
ePosters P9-1 TO P9-10

P9-1

Showmen in Urology

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Introduction: There are many instances where dramatic demonstrations of pathology or therapy have significantly influenced medical practice. We explore examples in urology.

Methods: We identified, and reviewed the pertaining literature on, three key "showmen" in our specialty.

Results:
1. Terence Millin (1903-1980). This Irish surgeon trialled TURP but favoured his own modification of the retro-pubic approach, hence "Millin's prostatectomy" still performed today. He demonstrated the effectiveness of this at a meeting of the Royal Society of Medicine when he had a patient, who he had operated on a week before and had plied with beer, to demonstrate his improved flow to the audience of stunned Urologists.

2. Giles Brindley (1926-). This British physiologist made a very dramatic demonstration of the pharmacological effects of Papaverine on the penis by revealing his own, previously injected organ during a lecture at the Urodynamics Society in Las Vegas in 1983. According to leading Andrologist John Pryor "the impact was tremendous", and went a large way to herald the era of pharmacological treatment of impotence.

3. Christian Chaussy (1945-). This German Urologist was instrumental in developing the first ESW lithotripter. He even volunteered to be the first human subject on this then very much experimental machine. His open-door policy, inviting colleagues to live surgical demonstrations, did much to win over the initially sceptical Urological community.

Conclusion: "Showmen" can have a dramatic effect on the development of medicine, as demonstrated by the three presented here who changed the course of Urology.

P9-2

Alexander Randall: a major contributor to the understanding of the genesis of renal calculi

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Introduction: Urinary tract stones have been tormenting humans since the ancient times with the true aetiology remaining a mystery until the past century. We review the life and pioneering work of Alexander Randall who paved the way to the understanding of stone formation.

Methodology: A comprehensive search was performed on the life of Alexander Randall and his work on the pathogenesis of urolithiasis.

Results: Alexander Randall (1885–1951) started his career in urology at John Hopkins in 1907. His research focused on the origin of stones by studying the renal papilla and investigated by inducing stones in animal models, however inconsistent results changed his methodology to using human cadavers. In 1937, Randall described a hypothesis that renal calculus formation is due to renal papillary damage resulting in deposition of crystalline urinary salts. He reported vascular abnormalities and atherosclerosis associated with these plaques as degeneration of tissue overlying the calcium plaques would enhance subsequent stone formation. He published his most well-known series of over one thousand pairs of kidneys where he found that 20% showed evidence of early calcified plaques in at least one renal papilla, to which he gave his name.

With improvements in chemistry and imaging modalities, subsequent research on the pathophysiology of stone formation covered the gaps in Randall's theory related to his plaques.

Conclusions: Randall gave his name to subepithelial calcified plaques of renal papillae which act as anchors for stone formation. Great tribute is due to his work which has formed the basis of contemporary stone

P9-3

The contribution of Sir Thomas Spencer Wells to urology

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Introduction: Sir Thomas Spencer Wells served in Malta as a naval surgeon before establishing his own practice in London in 1853. He is most notably recognised in the fields of Obstetrics, Gynaecology and Ophthalmology. He was Surgeon to Queen Victoria's Household from 1863-1896. Although his contribution to Urology is less well known, he was founding member of St Peter's Hospital for Stone in London in 1860, the first hospital in Britain dedicated to urology.

Methods: A literature review was performed on the contribution of Spencer Wells to urology using Medline, Embase, Public Records Library and other sources.

Results: In 1860 Spencer Wells gathered with Armstrong Todd, Reverend Whatton and TP Aldershaw to discuss establishing a hospital for urinary stones. He subsequently published a paper in the press campaigning for a hospital dedicated to urinary diseases. St Peter's Hospital for stone was established in 1860. Wells practiced there until 1862 after which he departed to work at the Samaritan Free Hospital for Women. Whilst there, Wells was one of the first surgeons to recognise urinary tract injuries whilst pioneering ovarian cystectomy. After his death in 1897, St Peter's committee acknowledged Wells for maintaining an interest in the hospital's welfare throughout his career.

Conclusions: Sir Thomas Spencer Wells was a founding member of St Peter's Hospital and continued to contribute to urology throughout his career. This was one of the first specialist hospitals in London at the time and its establishment was a catalyst for the development of urology as a specialty.

P9-4

John Wickham - The Godfather

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Introduction: John Wickham (JW), it has been suggested, is the godfather not only of endo-urology in the UK, but a key pioneer of minimally invasive surgery internationally.

Material and Methods: The subject was interviewed and the resultant transcript analysed. Former colleagues were questioned and literature written by, or pertaining to, the subject was reviewed.

Results: Having witnessed the finesse of neurosurgery in his training and developed renal cooling for his MD thesis, on being appointed as a consultant in 1968, JW was concerned at the crude surgery for renal calculi which often resulted in nephrectomy. Over the subsequent decades he developed radial nephrotomies and then PCNL. In the face of resistance

from his British peers he joined with international colleagues to form the Endourological Society in 1994 and was their first president. He also formed the Society for Minimally Invasive Surgery, with innovators from other specialities in 1989. In the 1980's he introduced lithotripsy to the UK and with Malcolm Copcoat performed the first laparoscopic nephrectomy. He also led many endourological research projects and enthused a new generation of urologists. His most ambitious project was an autonomous TURP robot which, whilst clinically effective, was mothballed because of cost. However, as a proof of principle, it was invaluable, and foresaw the revolution in robotic urological surgery over the subsequent three decades.

Conclusion: JW can rightly be claimed to be the Godfather of Endourology and the impact of his work on minimally invasive surgery across specialities is still evident today.

P9-5

Reed Miller Nesbit: so much more than a straightening procedure

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Reed Nesbit (1898-1979) graduated from Stanford, before gaining surgical residency at Ann Arbour, Michigan. Under Hugh Cabot's tutelage, and whilst rooming with Charles Huggins, he published prolifically and progressed to become the first head of the Urology department.

His contribution to paediatric urology was significant. In 1931, Cabot and Nesbit described their single-stage orchidopexy procedure, which included their much citied method of testicular mobilisation. Nesbit (1940) subsequently described a two-stage repair for hypospadias consisting initially of chordee correction and ventral resurfacing using buttonhole transposition of the prepuce. A Z-plasty technique to correct stricture of the interval meatus was also reported (1954).

After a lecture by Theodore Davis (1931), Nesbit first revolutionised and then popularised transurethral resection of the prostate. He modified the Stern-McCathy resectoscope by extending the loop beyond the sheath and spring-loading the mechanism. Observing intravenous haemolysis, he introduced isotonic glycine for irrigation and limited operative time to 60-minutes (1948).

Combining cystometry with neurological examination, Nesbit and resident Lapides concluded that the bladder was controlled by two reflex arcs and then classified neurogenic bladder types (1947).

As ureterosigmoidostomy, then the favoured technique for urinary diversion, was frequently complicated by anastomotic stenosis, Nesbit (1948) developed a method of ureteric spatulation with mucosa-mucosa anastomosis which lowered the stricture rate.

In 1964, Nesbit described the surgical procedure for which he is synonymous. Initially used for correcting congenital penile curvature, it was subsequently adopted by Pryor & Fitzpatrick for the management of Peyronie's disease (1979).

Prior to retirement (1967), Nesbit became the first urologist to be President of the American College of Surgeons; a fitting finale to his remarkable career.

P9-6

The rise and fall of occupational bladder cancer in the Western World

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Introduction: One in ten cases of bladder cancer are attributed to occupational exposure to carcinogens. Multiple substances used in the chemical industries have been linked to the disease. We review the milestones that led to the discovery of carcinogens and changes in employment regulations leading to a fall in occupational bladder cancer.

Methods: A literature review on occupational bladder cancer was performed using Medline, Embase and the Archives of the Royal Society of Medicine.

Results: In 1895, German surgeon Ludwig Rehn reported three cases of bladder cancer in workers at the Hoechst aniline factory, Greisheim. However, the association with the chemical was difficult to prove as chemical manufacturers used other coal- and oil-based compounds. Betanaphthylamine (BNA), produced by distilling coal, was used in the production of dyestuffs, cables and rubber. In 1938, Delaware-based pathologist Wilhelm Hueper showed an increase in bladder tumours when BNA was administered orally to dogs but, being funded by the chemical industry, had difficulty publishing his research. BNA was prohibited worldwide following a landmark study by Case and Holster on British rubber industry workers in 1954 after discovering a 200-fold increased risk of bladder cancer. In 1972 Miyakawa subsequently demonstrated a significantly decreased incidence of bladder cancer.

Conclusions: The ground-breaking discovery of aromatic amines as the most important carcinogens in occupational bladder cancer prompted worldwide regulatory changes to the manufacture of rubber and dyestuffs. The incidence of occupational bladder cancer has decreased in the Western world but is still widely reported in less developed countries.

P9-7

The "Holy Stones"

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Introduction: Despitetheir divine powers, holy men and women have suffered from urinary stones since antiquity. This presentation explores the fascinating history.

Methods: A search for sources was undertaken using the internet and library sources.

Results: St Alban of Mainz is said to be the patron saint of kidney stones.

The Greek Philosopher Epicurus who preached freedom from fear (ataraxia) and from pain (aponia) died from an obstructing ureteric stone (270BC).

Pope Innocent XI underwent surgery for kidney stones and following his death in 1689, he was found to have "stones weighing nine ounces in the left kidney and six ounces in the right".

Martin Luther, a German monk, was also a sufferer of kidney stones. He consequently almost faced death from being 'unable to urinate'. It was the movement of the carriage on the journey home that prompted spontaneous stone passage and 'spared his life.'

The Bishop of Chester and founder of the Royal Society, John Wilkins, had the distinction of heading a college at both the Universities of Oxford and Cambridge. To treat his kidney stones, he was fed, "four red-hot oyster shells in a quart of cider and blistering with cantharides." It is believed that he died from the opiate overdose (1672).

Father Thomas in India had a miraculous disappearance of his kidney stone after praying to Mother Teresa.

Conclusion: The historical records of distinguished people give us an insight to the prevailing management of stones in the corresponding period.

P9-8

How intersex children in the Dominican Republic changed the face of urology

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Introduction: With an ageing population, the prevalence of benign

prostatic hyperplasia (BPH) is increasing and with it the number of men opting for conservative management over surgery. The concept behind finasteride, one of two main drugs, stemmed from the discovery of a gene mutation causing ambiguous genitalia in childhood. How did research of an intersex disorder go on to become the basis for one of the best-known drugs in urology today?

History: In the 1970s, Dr Julianne Imperato-McGinley, a consultant endocrinologist travelled to La Salinas in the Dominican Republic to investigate rumours of girls growing penises. Here she found guevedoces (translation: 'men at twelve'), an inter-related population who carry an autosomal recessive mutation affecting the 5-alpha reductase (5 AR) type II gene. Homozygous carriers are deficient in 5 AR, preventing conversion of testosterone to dehydroepiandrosterone. Until puberty this manifests as the absence of a penis and testes, and as adults these men have little facial and body hair, immunity from male pattern baldness and very small prostate glands.

Application: It is this final property of 5 AR deficiency that is utilised in finasteride, a 5AR inhibitor which mimics the effect of the gene mutation, reducing the size of the prostate and thus lower urinary tract symptoms.

Conclusion: With its introduction, finasteride changed the management of BPH, introducing a viable long term alternative to prostatic surgery. What started as a rumour around gender identity continues as a drug that improves the lives of men worldwide.

P9-9

From death sentence to improved quality of life: the evolution of management of malignant ureteric obstruction

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Introduction: Death from obstructive renal failure secondary to advanced pelvic malignancy was regarded as a possible desirable outcome. (Meyer et al, Cancer 1980; 45: 2698-2701). Treatment was reserved for severe pain or new diagnoses. We track changes in attitudes and techniques which have increased survival but especially quality of life.

Methods: Systematic literature review of databases (eg Pubmed) was performed using keywords such as ureteric/ ureteral obstruction, advanced pelvic malignancy and obstructive uropathy. Search dates used were 1900 – 2015. Abstracts of retrieved references were evaluated and relevant papers checked. Diversion method, survival, outcome, complications of diversion and quality of life measures were extracted.

Results: Less than 100 relevant papers were identified. From these two basic eras of clinical management are identifiable. The first involved very selective diversion using ileal conduit or cutaneous ureterostomy and lasted to the mid 1980`s. The second era is associated with increased use of diversion and increased minimally invasive techniques.
Use of these has led to reduced complications, reduction in hospitalisation time and has contributed to increased survival.

Conclusion: Brin et al (J Urol May 1975; 113(5): 619-22) in a series of 47 "malignant" diversions showed 23% alive at six months and 2/3 of their time was spent in hospital. Currently minimally invasive techniques used in conjunction with prognostic tabulation can improve both survival and quality of life in up to 66 % of diverted patients (Fiuk et al, J Urol. 2015 Apr;193(4): 1092-100). Clearly this represents a vast improvement. The challenge is to continue this sterling work.

P9-10

'Transgender': Mythology to modern times!

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Introduction: Transgender and transsexualism have fascinated people since antiquity. This study explores the history from ancient to modern day gender reassignment surgery (GRS).

Methods: A search for sources was undertaken using internet and library sources.

Results: In Indian mythology, deities are represented as both male and female at different times or of both genders at once, such as Ardhanarishvara ('Lord whose half is woman') created by the merging of the God Shiva and his consort Parvati. In African mythology, the God Mawu-Lisa, formed by a merger of the twin brother and sister Gods Lisa (the moon) and Mawa (the sun).
The patron God of transgender is Dionysus, a God gestated in the thigh of his father Zeus.
The birth of modern GRS was in Berlin. Rudolph became Dora by GRS performed by Dr Felix Abraham (1931). Lili Elbe had several procedures including a uterine transplant, the rejection of which caused her death and is the theme of a recent Hollywood movie.

In Britain, Sir Harold Gilles was the pioneer of GRS. He performed female to male GRS on Roberta Cowell (1951), which became the standard technique. Christine Jorgensen was a famous recipient of GRS (1952). She was a night-club singer and actress and fought for the rights of GRS people.

Conclusion: Norman Fisk introduced the term gender dysphoria syndrome (1973) to cover applicants seeking GRS. This surgery is complex and has evolved to change the physical characteristics based on a person's mental belief of his or her gender.