

# BJUI

## BAUS Annual Meeting, 21–24 June 2010, Manchester Central

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# SUPPLEMENTS

### Unmoderated Poster Sessions

#### **Tuesday 22 June 2010**

Unmoderated Poster Session 1

13:15–13:45                      Exhibition Hall (Central 2)

HISTORY OF UROLOGY

Posters U1–U17

#### **Wednesday 23 June 2010**

Unmoderated Poster Session 2

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HISTORY OF UROLOGY

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U 1

### Recording our history – the living witness programme

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**Introduction:** We are aware that the 1960's and 70's were decades that saw great development and innovation in our discipline and that many of the pioneers from that time are elderly. We sought to record their recollections of that period.

**Materials and Methods:** We were trained in interviewing and recording oral histories. The surgeons who we consider to be the most influential on the development of British urology were approached.

**Results:** So far, three interviews have taken place. The recordings have been transcribed and the transcripts and original material archived for public access.

**Conclusion:** We feel that this source of material is important in furthering our knowledge of the evolution of our specialty and that we have demonstrated that it is feasible to capture these memories. We would encourage the urology community at large to perform similar ventures in a timely manner.

U 2

### Jack Lapidès (1914–1995) and his groundbreaking concept

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University College London Hospital, United Kingdom*

**Introduction:** The treatment of lower urinary tract dysfunction was revolutionised by Dr Jack Lapidès' concept of clean intermittent self-catheterisation (CISC). This technique transformed outcomes in terms of reducing morbidity and improving the quality of life and survival for neuropathic patients and those with chronic urinary retention.

**Materials and Methods:** We performed a historical review of the life and works of Jack Lapidès based on a review of scientific publications and book chapters related to CISC.

**Results:** Jack Lapidès was born in 1914 in Rochester, New York. In 1941 he received his MD degree from the University of Michigan where he continued his entire academic career. He served as a flight surgeon in World War II. It was as Head of Urology between 1968 and 1984 that he investigated urinary tract infections and introduced the concept of CISC. This technique went against established medical practice but eventually proved to be a significant contribution in the field of urology and the management of neuropathic patients. It improved the lives of millions of patients, preserved renal function and formed the foundations to establish urinary tract reconstruction in the form of bladder augmentation and continent

diversion. He passed away in 1995 but the Jack Lapidès Professorship and Jack Lapidès Research Fund in Pediatric Urology continues in his honour.

**Conclusions:** Jack Lapidès' pioneering work on CISC has improved the lives of thousands of patients worldwide suffering from lower urinary tract dysfunction.

U 3

### Emperor Shen-Nung's root: Ginseng in the management of erectile dysfunction in ancient China (3500–2600 BCE)

*R Nair, S Sriprasad  
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**Introduction:** Emperor Shen-Nung is the second of China's mythical emperors (3500–2600 BCE). Widely considered the father of Chinese medicine, he catalogued 365 species of medicinal plants which he personally tasted. Through his treatise 'Shen Nung Benchau Jing', we re-live Shen-Nung's contribution to urology with reference to his management of erectile dysfunction.

**Material and Methods:** Time related sources in medical and historical literature were reviewed, including the 'Shen Nung Benchau Jing' (The medicine book of Emperor Shen-Nung).

**Results:** Chinese traditional herbal medicine began approximately 5000 years ago. Agricultural clan leader, Emperor Shen-Nung, was said to have a crystal-like belly to watch reactions in his own stomach of the herbs he collected.

Ginseng was among of Shen Nung's contributions to herbal medicine. He experienced a warm and sexually pleasurable feeling after chewing the root. He advocated this as a treatment for erectile dysfunction and used it to stimulate sexual appetite. It prominently features in ritual Taoist sexual practices according to which sex without ejaculation is a means of rejuvenating the body.

The reputation of ginseng as an aphrodisiac is based on the doctrine of signatures since the adult root has a phallic shape. Shen-Nung believed that ginseng's resemblance to human form is proof of its rejuvenative and aphrodisiac properties. The closer the similarity to the human figure, the more potent the root.

**Conclusions:** The use of ginseng for erectile dysfunction by Emperor Shen-Nung was unique for its time. It continues to hold parallels as a modern day herbal aphrodisiac 5000 years on.

U 4

**Eugen von Hippel and Arvid Lindau: an unlikely legacy**

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Use of novel targeted therapies has revolutionised the treatment of metastatic renal carcinoma. Their development can be traced back to discoveries by 2 very different men working in Europe in the early 20th century.

Eugen von Hippel (1867–1939) described angiomatosis retinae in several generations of a single family. He was a stern and reserved man who demanded the best from all who worked for him. Arvid Lindau (1882–1958) was the son of a Swedish military doctor, who trained and worked in Lund. He described a coherent link between retinal, cerebellar and visceral components of what he called 'angiomatosis of the central nervous system' in 1926. This condition later became known as von Hippel Lindau disease. His personality was very different to that of von Hippel. He had a light-hearted sense of humour and was a bon viveur with a passion for cigars, music and cars.

We describe how von Hippel and Lindau became the unlikely fathers of the treatment of metastatic kidney cancer. Their story involves luminaries such as Edward Treacher

Collins, Wilhelm Erb and Harvey Cushing. We describe the controversial name of the disease and the discovery of the VHL gene, which is mutated in most clear cell renal carcinomas. Knowledge of VHL function in angiogenesis has led to the development of novel anti-angiogenic therapies which are now standard treatment for metastatic renal carcinoma. Therefore, the description of a rare, seemingly unrelated hereditary disease has had an unpredictable and enduring legacy in the treatment of metastatic renal carcinoma.

U 5

**'Pecunia non olet!': Money that does not smell and the birth of public lavatories**

*R Nair, H Marsh, S Sriprasad  
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**Introduction:** The Roman Empire regarded urine a valuable commodity. It was collected as material for tanning, laundering and tooth-paste. We examine the role of urine in first century Rome and explore vectigal urinae, a tax levied by Roman Emperors for its trade.

**Material and Methods:** Historical literature was reviewed from the Wellcome History of Medicine Collection and the British Museum, London.

**Results:** First century Rome saw the introduction of vectigal urinae, a tax introduced by Roman emperors Nero and Vespasian funding the collection and distribution of urine. Lower social classes collected and emptied their urine into communal lavatories. The tax applied to all public toilets in Rome's now famous Cloaca Maxima (great sewer) system and it funded its development within the city.

Urine was used in the tanning industry as bleach, and to soften and loosen the hairs from the surface of hide. Wealthy Romans paid large sums of money for 'stronger' Portuguese urine provided an ideal whitening effect in toothpaste.

When Vespasian's son Titus protested against vectigal urinae, his father held up a gold coin and said Non olet! ("It doesn't smell!"). This phrase, still in use today describes 'all money is equally filthy regardless of its source'. To this date, Vespasian's name is associated to public urinals in France, Italy, and Romania.

**Conclusions:** In ancient Rome, urine was a marker of wealth and status. Vectigal urinae played a vital role in the development of the public urinal system, an architectural feat that holds many parallels to this day.

U 6

**History of Urodynamics**

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United Kingdom*

Urodynamics is the dynamic study of transport, storage and evacuation of urine by the urinary tract. Its use is unquestioned for the management of patients with neurogenic bladder dysfunction, bladder outlet obstruction and urinary incontinence. The term "urodynamics" was first used by David Melton Davis in the Journal of Urology in 1962.

The measurement of bladder pressure and urine flow rate can be traced back to the 19th century. Eugen Rehfisch, measured flow rates at the Physiological Institute of Berlin in 1897 and published his results on 40 pages in 'Archives of Pathologic Anatomy, Physiology and Clinical medicine' edited by Rudolf Virchow.

A lukewarm boric acid solution was instilled into the bladder with a catheter. A three-way stop cork enabled the measurement of the intravesical pressure by a Gad sphygmomanometer. A funnel under the urethral meatus directed the urine into an air displacement meter which recorded the intravesical pressure. His figure of this experiment is well known in Urodynamic literature.

Rehfisch's experimental and clinical studies were of utmost importance to the next generation of physicians and were reorganised in the 'Handbuch fur Urologie' by O.Schwarz in 1926.

M Brown and J Wickham 1969, in London, devised a simple and famous method of recording the effective pressure exerted by the urethral wall at every point of its length. Today, these basic urodynamic tests may be augmented by measurement of electrical activity in the bladder neck and urethral pressure profilometry. Fluoroscopy of the bladder forms the basis of Video-Urodynamics.

U 7

**The ritual of circumcision and subincision in aboriginal tribes***M F Bultitude, R Thomson**The Alfred Hospital, Melbourne, Australia*

Aboriginal culture is one of the oldest on earth dating back up to 125,000 years. We have found a number of articles published between 1893–1914 detailing the customs of circumcision and subincision.

Initiation ceremonies vary greatly between tribes. These practices may have evolved as a way of reducing phimosis and urethral strictures in dry arid conditions. As such they may represent a very early form of social/preventative medicine.

Usually they are performed at the time of puberty and involve great pomp celebration as it is seen as a time that a boy becomes a man. In a remote camp, the boy is held down and the procedure performed with a stone flint or firestick.

Some tribes then tie the foreskin to the boy's hair and others bury it or press it into a young tree in the hope that both boy and tree grow and flourish. In one tribe the foreskin is dried and worn as a necklace by the boy's sister. Some reports suggest the boy, his brother or even the circumciser swallows the foreskin!

Subincision takes place at a later date. The urethra is slit downwards from the glans with a sharp flint and hot ashes thrown over the wound and covered with emu grease.

Some texts suggest it prevents urethral strictures or even as contraception. It seems likely that it is simply a ritual and corresponds to the equivalent mutilating procedure in women which is carried out without the ceremony.

U 8

**Historical aspects and Controversies behind discovery of Urography***V S Hanchanale, T Shah**Bradford Royal Infirmary, United Kingdom*

**Introduction:** The journey of Uroradiology has grown from simple x-ray visualising the renal stones to the latest computed tomography. We have tried to incorporate the role of urography and its historical aspects.

**Materials and Methods:** Medical literature and web search was done into discovery

and journey of historical aspects of urography. Briefly its urological utility has been assessed.

**Results:** Rowntree and Osborne from May Clinic (1923) were first to use oral and intravenous sodium iodide to visualise the bladder and pyelogram. In 1928, Hryntschak used bromide-iodine compounds and Roseno, tried sodium iodide-urea with significant side effects and minimal diagnostic use.

In 1923, Leopold Lichtwitz, a professor of medicine, Germany, during metabolic studies found that some pyridine compounds containing iodine were excreted in the urine, and he suggested its possible role in urography.

In 1929, while working with Professor Lichtenberg, Swick investigated various pyridone group compounds, before he finally discovered the '**UROSELECTAN**' (5-iodo-2-pyridone-N-acetic acid). After a major dispute for chief credit for this discovery, Swick got an initial acknowledgement but Professor Lichtenberg was given the Major credit. For the next 35 years, Moses Swick did not receive the recognition he deserved and finally in 1965, Moses Swick was awarded with the distinguished Valentine Medal by the New York Academy of Medicine.

**Results:** In current uro-radiology, despite newer technologies (nuclear medicine, ultrasound, computed tomography and magnetic resonance imaging) urography still has its unique role.

U 9

**Sir Henry Thompson – The great Victorian personality and urologist***M Herath, P Thompson**King's College Hospital, London, United Kingdom*

**Introduction:** Sir Henry Thompson helped to perfect the art of lithotripsy. After the successful surgery of crushing and evacuating a bladder stone of King Leopold he enjoyed a European reputation. His techniques however were soon to become obsolete.

**Materials and Methods:** Researched from the literature, including the 'Versatile Victorian' by Zachary Cope, 'A history of bladder stone' by Harold Ellis and supplemented by internet search.

**Results:** Sir Henry Thompson specialised in Urology and was aware of the perils of

cutting for stone. He went to Paris to study under Jean Civiale who had developed lithotripsy for crushing bladder stones. On return he continued to develop lithotripsy, refined the lithotrite and was recognised as being the most skilful at this technique.

In 1863 the King of Belgium had severe pain from a bladder stone. Both Civiale and Langenbeck failed to crush the stone and Henry Thompson was called. He succeeded and the King made an uncomplicated and rapid recovery. Henry Thompson was subsequently honoured with a Knighthood. His practice became limited to urology of the lower urinary tract. He was the first to remove a tumour of the bladder and he became an authority on the enlarged prostate.

**Conclusion:** Sir Henry Thompson was undoubtedly the most famous and celebrated Urologist of the day. Although he acknowledged antiseptics he failed to see the future possibilities of cystoscopy, prostatectomy and their impact on stone surgery.

U 10

**Botulinum Toxin: Biological weapon, Beauty and the Bladder***T Bhat, S Shah, H Marsh, S Masood**Medway Maritime Hospital, Gillingham, United Kingdom*

**Introduction and Objectives:** Botulinum toxin (BT) is a potent neurotoxin with therapeutic applications in ophthalmology, neurology, dermatology and urology.

**Methods:** A systematic search of online and published material was conducted including original articles and papers

**Results:** In 1822 the German physician Justinus Kerner published the first description of botulism or sausage poisoning. It was then Emile P. van Ermengem from Belgium who in 1895, first isolated Clostridium Botulinum from both food and post-mortem tissues of the victims of food poisoning. In 1916 the British set up the chemical warfare complex at Porton Down in Wiltshire, and amongst other toxins, investigated BT. In 1937, the Japanese formed a biological warfare group, unit 731, and poisoned prisoners in occupied Manchuria with BT. In the US, in 1946 research into BT took place at Fort Detrick where Edward Schantz developed different types of BT. The

first therapeutic use of BT was in strabismus by an American, Dr Alan Scott with excellent results. In 1987 a Canadian ophthalmologist Jean Carruthers and her husband Alastair noticed that the frown lines disappeared in patients who were treated with BT for blepharospasm. The application of BT in the human bladder was pioneered by Dennis Dykstra for detrusor sphincter dyssynergia in 1988 and Brigitte Schurch for detrusor overactivity in 2000.

**Conclusions:** BT is a highly versatile pharmaceutical which has previously been used as biological weapon and is now a cosmetic agent as well as providing hope for a variety of refractory urological conditions.

U 11

**The History of Testosterone Supplementation**

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The history of testosterone stretches over millenia, when farmers observed that castrated animals were more docile with lower sex drives. Castrated humans behaved similarly to e.g. eunuchs in Asia. In 1849, German scientist Berthold demonstrated that capons (castrated chickens) matured into roosters following intra-abdominal testicular transplantation. As the implanted testes were denervated, the factor responsible had to be blood-borne. In 1889 Harvard professor Brown-Séquard self-injected a "rejuvenating elixir" derived from animal testicles. He reported increased vigour and urinary flow in *The Lancet*. However, these effects were transient and the work ridiculed by the medical community. Despite this, by the 1900's, over-the-counter tablets were available, including Henry Harrower's Gonad Tablet, Testacoids and Concentrated Orchitic Solution. In 1913, an American physician, Lydston performed the first successful testicular transplant and such operations became commonplace.

It was nearly 40 years before the hormone androstenedione was isolated by Butenandt and testosterone soon after that. That same year, synthesis of testosterone from cholesterol was achieved by Butenandt and by Ruzicka earning them the Nobel Prize in chemistry in 1939. The period of the early 1930s to the 1950s has been dubbed "The Golden Age of Steroid

Chemistry". Research progressed rapidly, proving that this newly synthesized compound was a potent multiplier of muscle strength and wellbeing.

Today numerous derivatives are available including injectable and topical formulations. New benefits are being reported for more conditions including depression as well as reducing atheromatosis and insulin resistance suggesting new potential uses for testosterone in human healthcare.

U 12

**The History of Ureteroscopy**

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**Objective:** To provide a brief history of the development of ureteroscopy.

**Methods:** A web-based literature search identified different sources reporting ureteroscopy development.

**Results:** Hugh Hampton Young performed the first ever ureteroscopy in 1912, during a cystoscopy for bladder neck obstruction in an infant. Noting a greatly dilated ureteric orifice, the cystoscope was advanced easily to the renal pelvis. Although he did not report any subsequent ureteric endoscopic procedures, his unplanned ureteric adventure made history.

In 1964, fiber-optic technology enabled Marshall to perform the first flexible ureteroscopy using a 9F fiberscope manufactured by American Cystoscope Makers to visualize an impacted calculus but the first purpose built rigid ureteroscope was not introduced until 1979.

Early flexible ureteroscopes were rudimentary (no irrigation, working channels or active deflection) thus permitting only primitive diagnostic maneuvers. In the early 1980s, Bagley, Huffman, and Lyon worked together at Chicago University to develop an improved flexible fiberoptic ureteropyeloscope. Three major design changes (addition of a working channel, active tip deflection and altered stiffness of the endoscope shaft) facilitated lower-pole intrarenal access.

By 1990, optical fiber miniaturization and improved geometrical pixel packing produced a smaller fiberoptic bundle and thus, a smaller-diameter endoscope. Flexible ureteroscope specifications included a 10F outer diameter, a standard 3.6F working channel, and unidirectional active tip

deflection combined with secondary passive deflection.

**Conclusions:** Since 1990, further advances in ureteroscope design, instrumentation, and incorporation of newer technologies, have significantly expanded the therapeutic and diagnostic efficacy of the instrument, while the complications associated with ureteropyeloscopy have decreased significantly.

U 13

**A century of prostate brachytherapy**

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Prostate brachytherapy dates back to 1913 when Pasteau and Degrais inserted a radium capsule into the prostatic urethra for the treatment of prostate cancer. Hugh Young appreciated that this failed to treat the periphery of the gland without causing excess morbidity. He allowed for this by providing a mobile external source of radiation with the principle of maximising prostate dose whilst keeping surrounding doses to a minimum. Barringer, in New York, developed a transperineal finger-guided technique and brachytherapy treatment became popular in the pre-war era. Long-term results were poor, however, and prostatectomy became the treatment of choice.

In 1952, Flocks introduced the injection of colloidal radioactive gold, further developed by Carlton who combined solid gold implants with external radiotherapy. Whitmore in the 1970s developed a technique of open retropubic implant of Iodine seeds guided by a finger in the rectum. Due to poor distribution within the gland, again long-term results were unsatisfactory. The revolution came in the early 1980s when Professor Holm developed the transrectal ultrasound and technique: in a two-stage procedure (ultrasound planning and then transperineal implantation under ultrasound guidance) dose distribution became more homogenous and accurately placed. Seattle physicians developed this further (the "Seattle technique") with satisfactory outcome data.

Modern techniques use computer software to plan intraoperatively and assess the dose distribution in the operating room. This allows "on the table" adjustments. Combined

with advanced imaging techniques, the early principles of targeting the prostate and avoiding surrounding organs is now attainable with a high degree of accuracy.

U 14

#### History of bladder wall calcification

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One of the earliest records of bladder wall calcification is from one of the most medically studied mummies displayed in the Manchester Museum. The lady called, Asru; was a Chantress at the Karnak Temple, dedicated to the god, Amun, in around 1000–700BC. Linear calcification of the bladder wall on x-rays of the mummy have suggested chronic infection of shistosomiasis.

The most important causes of bladder wall calcification include: bilharziasis, primary carcinoma of the bladder (both transitional cell and squamous carcinoma), alkaline encrustation cystitis, amyloidosis, cyclophosphamide induced cystitis and tuberculosis.

Bladder calcification has been classified based on the radiologic appearance into the various patterns (linear rim, wavy line, homogenous opacity and "cumulus cloud" calcification). It may be also graded depending on the extent of the circumference of bladder that is involved.

In the developed world, there has been an increase in the calcification of the bladder wall related to intravesical treatments such as mitomycin, thio tepa and BCG.

Calcifications developing at the bladder neck/urethra treated with glutaraldehyde cross-linked collagen. Substance abuse with ketamine has been shown to have significant bladder symptoms. It may also be one of the newer causes of bladder calcification.

U 15

#### Radical Change in Endourology – The Harold Hopkins Story

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**Introduction:** Harold Hopkins is credited with the invention of the glass-rod lens which has forever changed the image quality through the cystoscope. This report

summarises how he arrived at this amazing innovation.

**Materials and Methods:** Data was collected from various sources: published obituaries, personal accounts from colleagues, published papers and local archives.

**Results:** Harold Hopkins was born in Leicester in 1918. An expert linguist, his mathematical ability was only recognised by his new headmaster, who encouraged him to pursue this. A chance dinner meeting in 1951 with a gastroenterologist prompted him to develop among the first flexible fibre-optic gastroscopes. He could not patent this due to lack of financial support. It was on the persistence of Jim Gow, a Liverpool urologist who wanted to capture photographs inside the bladder, which made Hopkins think of a radical idea of changing the lens system of the cystoscope. This improved light transmission by 80 times! Again British and American manufacturers failed to invest in Hopkins' invention. He then received a phone call in faltering English from Tuttlingen in Germany. Hopkins replied in fluent German, much to Karl Storz's relief! This marked the dawn of a new era. Storz's idea of cold light through fibreoptic cables together with Hopkin's glass rod lens was first presented in 1967 at the SIU meeting in Munich, and instantly swept the field.

**Conclusion:** Hopkins, a professor of optical physics, made a huge contribution to the world of urology with his remarkable invention of the glass-rod lens.

U 16

#### Charles Brenton Huggins (1901–1997): Urologist and Nobel Prize winner

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**Introduction:** The Nobel Prize in Physiology or Medicine was first awarded in 1901. It was established by Alfred Nobel to acknowledge "those who during the preceding year had conferred the greatest benefit on mankind." We present a brief history of the life and work of Charles Brenton Huggins a Professor of Urology and Nobel prize winner.

**Materials and Methods:** We reviewed the life and work of Charles Huggins and the achievements that gained him the Nobel Prize in 1966. Information was sourced from Medline and Pubmed databases and the Nobel Foundation.

**Results:** Charles Huggins was born in Halifax, Canada in 1901 and graduated from Harvard Medical School in 1924. Much of his academic career took place at the University of Chicago where he was appointed Professor of Urology and served as Chief of Urology for 25 years. Much of Huggins' career was dedicated to basic science, combining his two major interests: urology and cancer research. His pioneering contribution with the help of his student, Clarence Hodges, was the discovery of the effects of androgen deprivation on prostate cancer. This was a significant step in the management of prostate cancer and to this day the same concept has directed metastatic prostate cancer therapy. He died in 1997 in Chicago.

**Conclusions:** Charles Brenton Huggins' pioneering work still forms the foundation for hormone manipulation in prostate cancer and he remains an inspiration to those who have dedicated themselves to the field of Urology.

U 17

#### Difficult catheterisation: An advice from the eighteenth century

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**Introduction:** Rubber catheters or bougies were used in the eighteenth century to empty an otherwise obstructed bladder. Common causes were urethral strictures, bladder stones and enlarged prostates. Inability to pass a catheter would frequently result in death. John Hunter (1728–1793) reported, in his treatise on venereal diseases, some tricks on how to deal with difficult catheterisation.

**Methods:** Extensive research through Hunterian archives at the Royal College of Surgeons, Wellcome Library and Hunterian Society collections for the Diploma in the History of Medicine.

**Results:** Hunter used catheterisation for diagnostic and therapeutic purposes. When faced with a difficult case he used to bend the tip of the bougie and guide it through the urethra with his finger in the rectum. Another way was to push a hollow catheter through which a brass bristle was inserted to negotiate the obstruction. If obstruction recurred, Hunter drained the bladder through a surgically fashioned artificial opening. He

suggested three methods- suprapubic, trans-rectal or trans-perineal. He preferred the first and deemed the second method dangerous. He was the first to describe the median lobe

of the prostate and recognise it as a cause for retention.

**Conclusion:** Hunter's approach to difficult catheterisation was systematic and

progressed to more invasive methods when necessary. His success was due to extensive experience, sharp observation and a methodical approach.