Artificial Urinary Sphincter (AUS)  July 2008

What is it?
The artificial urinary sphincter (AUS) is a surgically implanted device for controlling urinary incontinence which has been in use since 1972. Usually, when the bladder is full, the urge to urinate is felt because a message goes from the brain, through the network of nerves in our back (spinal cord), to the natural sphincter (muscle that keeps the urethra closed). When it receives the message, the sphincter relaxes and allows the bladder to empty. Afterwards, it tightens again, squeezing the urethra (the opening which allows urine to leave the body) to keep urine from leaking out of the bladder. Sometimes the "messages" aren’t able to get from the brain to the natural sphincter. This often happens because the nerve supply (communication network) is damaged, as in spina bifida. The bladder is then considered to be "neuropathic" and must be managed.

If the bladder is difficult to manage and urine continues to leak, the urologist may decide that an AUS is necessary. An AUS is fitted either to strengthen a small part of the urethra, or to squeeze a small part of the bladder neck (bulbar urethra). The device is made from silicone elastomer - a synthetic (non-latex) rubber so the body isn’t likely to become sensitive to, or reject the material. It has three main parts: a cuff, a pump and a balloon. All three parts are connected by silicone tubing.

How is it fitted?
The AUS is surgically implanted through an incision (cut) in the lower abdomen. In males, an additional incision is made just behind the scrotum on either the left or right side. The AUS is hidden inside the body with the the balloon in the abdomen and the pump in either the left or right scrotal sac in males, or the labia in females. The cuff, which holds a small amount of water, is inflated and then gently wrapped around the urethra.

How does it work?
The inflated cuff applies gentle pressure to the urethra, helps to hold the urine in the bladder, and thereby improves continence. The pump has a soft curved end which can easily (and gently) be pressed to shift the water from the cuff to the balloon. When it is time to urinate (wee), the pump is pressed, and the pressure is released, relaxing the sphincter so the urine is free to be drained. The bladder can then be emptied by whatever means is normally used, for example clean intermittent catheterization (CIC - see leaflet). After a few minutes the fluid returns to the cuff, and the pump returns to its original shape. The bladder once again becomes continent.

When can it be used?
For the first month after surgery, the AUS is left deactivated, or switched “off” to allow the body to adjust to having the implant, and to allow swelling to settle. Within four to six weeks after surgery, the doctor or nurse specialist will activate or switch “on” the AUS and explain how to use it.

As with all surgery, very occasionally things do go wrong. Sometimes the cuff does not provide sufficient pressure on the urethra to stop urine from leaking out of the bladder and the cuff needs to be replaced with one that gives a higher pressure range. Infection, pump failure and erosion may also occur in some people, in which case, the system would have to be replaced. Ejaculation may be a problem, but this can be overcome by changing the position of the cuff.

Who is it for?
Although the artificial urinary sphincter is a very effective way of maintaining continence when the sphincter is weak, it is used only when other methods fail or the urologist decides they are inappropriate.

Insertion of an artificial sphincter is an expensive operation, but if the cost of providing incontinence pads and protective bed pads, etc for a lifetime are taken into account, then this alternative method proves to be more cost effective in the long run. Candidates for this type of surgery need to be carefully selected though because four-hourly emptying of the bladder is essential. Furthermore, the AUS is generally not advisable for boys before puberty, due to physical changes.
Help us

ASBAH relies on people’s generosity and support so we can help our clients who depend on us for help and advice - people with hydrocephalus, spina bifida, their families and carers. To donate to ASBAH please visit www.asbah.org or call 01733 421327.

This information has been produced by ASBAH’s medical advisers and approved by ASBAH’s Medical Advisory Committee of senior medical professionals.

Further information and resources

A ‘Need to Go’ card is available from ASBAH. The credit card size laminated card may help service users access toilet facilities when out and about. To find out more telephone the helpline or email helpline@asbah.org

Radar - The disability network offers a key scheme which allows people with disabilities access to locked public toilets. Visit www.radar.org.uk or telephone 0207 250 3222 to find out more.

Link magazine

The essential magazine for people with hydrocephalus and spina bifida.

Link is published quarterly (Winter, Spring, Summer and Autumn) and is packed with the latest news, events and issues for individuals, carers and people living with hydrocephalus and spina bifida. To subscribe contact ASBAH’s Helpline 0845 450 7755 email: helpline@asbah.org or visit our web site: www.asbah.org and click on the publications page.

Coloplast and ASBAH are working in partnership to campaign for an increased awareness of bladder and bowel health and to support ASBAH’s members and families in their efforts to live a full and satisfying life.