

# Interventional Pain Therapy – Nieuwegein, The Netherlands

*The St Antonius Hospital was founded in Utrecht in 1910 and relocated to Nieuwegein in 1983. Besides being a general hospital, St Antonius is a major referral center for cardiovascular, pulmonary patients and multidisciplinary pain therapy. In the surgical department 24,000 operations per year are performed, including 1750 cardiac, 200 pulmonary and 500 vascular cases.*

## WHO/WHERE

St Antonius Hospital, Nieuwegein,  
The Netherlands  
General hospital, 584 beds



## CHALLENGE

Interventional pain treatment:  
Relieve your patient's chronic pain using:  
Highest quality images with  
lowest possible dose.  
Easy to maneuver system with  
intuitive user interface.  
Fully integrated DICOM system,  
which facilitates easy handling of  
patient information.

## SOLUTION

BV Pulsera mobile C-arm system



The facility provides a warm and welcoming atmosphere for both patients and staff. St Antonius is also a teaching hospital and offers services for virtually all medical specialties. The hospital strives to make high quality care accessible to everyone. One way it does this is by investing in state-of-the-art medical

technology that helps staff work as effectively and efficiently as possible.

## The Surgical Department

Day-care surgery and surgery on in-patients are carried out in the same area. Eleven OR's are in use for surgery, one for pain management.

# PHILIPS

Interventional pain therapy is used for intractable chronic pain, usually when other treatment options have been exhausted.

Methods of interventional pain treatment where C-arm systems are used:

- Epidural or spinal administration of analgesic drugs or baclofen.

The drug is administered via a catheter as a single injection, multiple bolus injection or via an implantable infusion system

- Nerve blocks.

The nerves responsible for the pain are treated with radiofrequency thermolesion, pulsed radiofrequency, cryo-lesion or by an injection of corticosteroids.

- Spinal cord stimulation (SCS) in neuropathic pain, angina and peripheral vascular disease.

The multidisciplinary Pain Clinic in St Antonius hospital treats about 1000 new patients per year and provides 1500 follow-up consultations for chronic non-malignant pain and cancer pain. The Pain Clinic team comprises neurologists, rehabilitation physicians, psychiatrists and anaesthesiologists. The Pain Clinic performs 2300 major interventional procedures per year. The four anaesthesiologists who work in the pain clinic are: Jack Poell, Eric van Dongen, Liong Liem and Harold Nijhuis (from left to right in photo).



The anaesthesiologists use a multi-purpose mobile C-arm system, the BV Pulsera, which supports an exceptionally broad range of applications including interventional procedures. In future the St Antonius Hospital will serve as an international reference site for this system.

### **Exceptionally good image quality with very little radiation dose**

For the team in St Antonius, image quality is a very important issue. Dr Liong Liem is very enthusiastic about the results he has achieved with the BV Pulsera. “I’ve been working in this area for 25 years and the BV Pulsera system provides images of a quality I haven’t seen before.” The images are incredibly clear and detailed, and are even better with digital exposure. Because of the excellent image quality, the BV Pulsera enables us to work more quickly and consistently, bringing us both technical and economic benefits”.

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*“The BV Pulsera system provides images of a quality I haven’t seen before.”*

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### **Easy to maneuver and easy to use**

Dr. Liong Liem is also positive about how easy the Philips BV Pulsera system is to use.

“The system is very small and lightweight with precision steering. You can position the system exactly where you need it and move it slightly one way or the other to get just what you need in view. The C-arm rotates a full 135 degrees so any projection needed for the pain management procedure can be made. With an intuitive user interface and pre-programmed APF’s, the system gives more control over your fluoroscopic imaging.”

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*“The system is very small and lightweight with precision steering.”*

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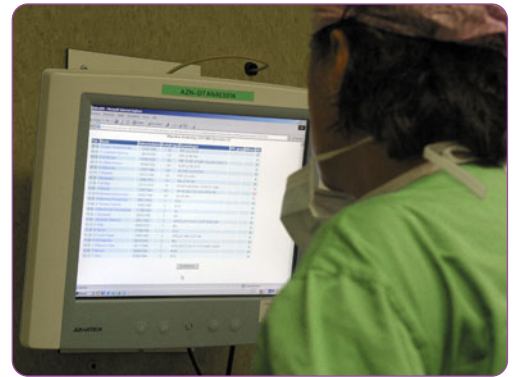
The BV Pulsera features two 18" flat screen LCD monitors on a flexible arm that allow positioning of the screens according to the individual needs of the physician.



“With these flexible flat screens you can get the monitors close to you, making it easy for you to teach staff in training”.

### **Fully integrated DICOM solution**

The pain clinicians day is always busy. Accessing RIS/HIS information offers them a number of obvious benefits, such as instant availability of patient data at their workspot, and the possibility of sharing images and patient digital information.



The fully integrated DICOM solutions allow the physician to save the data on a harddisk or transfer it from the BV family onto the hospital network. Images can be easily reviewed, printed and stored (very useful for training purposes). Furthermore the system supports full RIS/HIS functionality.

**Cases:**

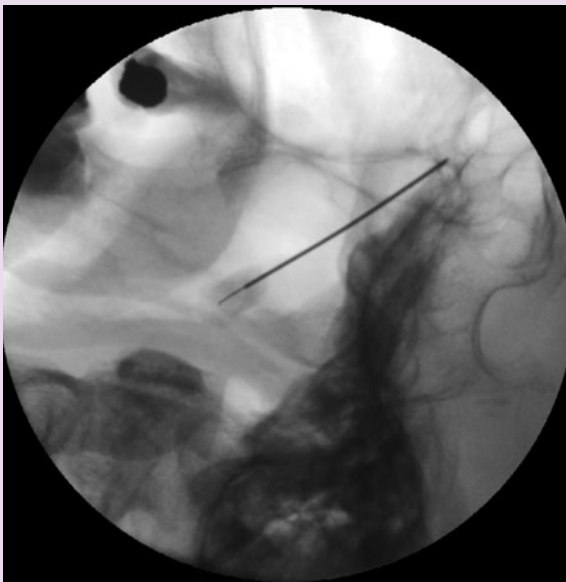
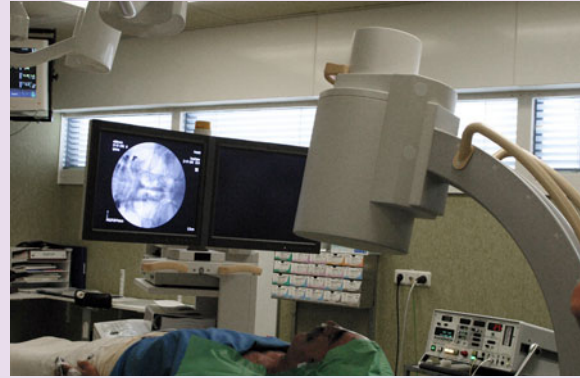
Lumbar root sleeve injection of corticosteroids in a patient with chronic L5 radicular pain.



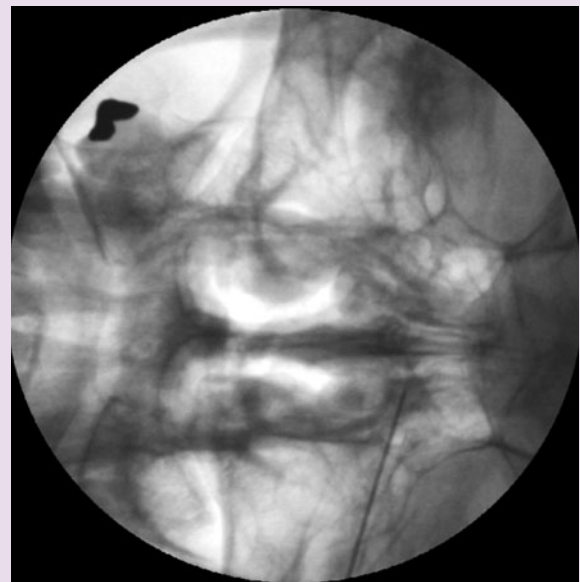
AP view showing needle on nerve root.  
The contrast shows root sleeve.



## Sphenopalatine ganglion block in a patient with severe cluster headache

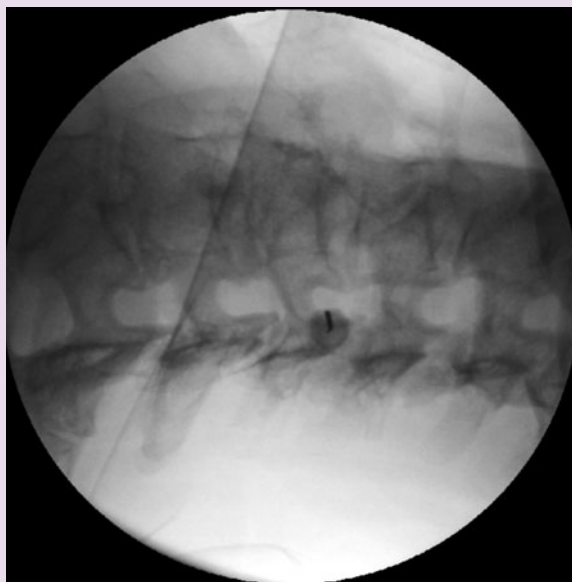


Lateral view of face showing needle tip in pterygopalatine fossa.



AP view with needle tip at lateral wall of nose.

## Cervical dorsal root radiofrequency lesion performed in a patient with chronic cervical headache



Oblique view at C5 dorsal root ganglion (DRG).



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Printed in The Netherlands.  
4522 981 97061 \* SEP 2004

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