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gKteso develops 6D-Robotic-Couch for linear accelerators

More comfort, higher safety, faster cycle times and more time for the patient

Radiation of cancer patients has become an important and widespread therapeutic option. Of particular importance here is medical experience, a great deal of tact and skill as well as best possible patient positioning. gKteso has developed the Radiotherapy Patient System RPS base, a 6D-Robotic-Couch for radiotherapy with linear accelerators, including latest technology for radiation as optimally as possible.

The patient platform is electronically controlled and does not require unnecessary corrections, due to stored patient data and its capability to re-approach the initially defined positioning at the touch of a button. "The flexible mobility of the platform, ensured by its six degrees of freedom, is another quality feature of RPS", explains Guido Kübler, Managing Director of gKteso.

Patient positioning from head to pelvis at the touch of a button

A patient can be optimally aligned and fixed from head to pelvis, as the patient platform is compatible with all fixation aids (add-ons). By means of dynamic tracking procedure, the patient platform corrects even organ movements automatically. In this tracking procedure, the position and movement of an organ is exactly determined by an internal or external marker, continuously conveying these data to the patient platform for any correction. "This is how pinpoint radiotherapy of the defined tissue is ensured", Kübler emphasizes. It is necessary, inter alia, in treatments of prostate tumors, where the bowel movements constantly change the position of the diseased organ.

Central point of any rotational movement is the isocenter, which substantially facilitates operation. The patient platform, featuring high rigidity, is prepared for dynamic corrections. Further ad-

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vantage: Older linear accelerators can be upgraded with RPS as well. RPS base is adjustable in height from 64 to 151 cm (25" to 59") at a velocity of zero to 50 mm (0 to 2") per second. The margin provided in the lateral alignment is of up to plus/minus 25 cm (+/- 10") and in the length of up to plus/minus 57 cm (+/- 22") at 0 to 80 mm (0-3") per second. Another advantage is the large adjustment angle of up to five degrees in any direction.

RFID-Reader reads in patient data

Patient data as well as all data of applied supporting aids are read in by the integrated RFID-Reader, providing these for further software systems, for example, for documentation of the treatment. This makes preparation for radiotherapy verifiable. „Since data no longer need to be recorded manually, also documentation is facilitated“, as Kübler describes this essential bonus for both clinics and radiotherapy centers. Last but not least, it will have a positive effect on expenses. RPS also meets and exceeds the safety requirements, due to this technical feature.

Up to three patients are prepared for radiotherapy

The RPS extended model, an expanded system of the 6D-Robotic-Couch, allows serial, comfortable and fast radiotherapy with linear accelerator. Here, up to three patients can be simultaneously prepared and fixed for radiotherapy in separate rooms. Cost savings of more than 55% can be achieved. Aside from increased cycle times, RPS extended provides the advantage of reducing the time pressure posed on medical technology assistants. "Time saved in treatment gives room for personal attention to the patient and positively affects the irradiation process", Kübler states. This may represent an essential unique selling proposition for clinical radiotherapy centers that are increasingly exposed to an intense competitive situation.

In RPS extended, satellite arms gently move the patient to the system in order to be conveyed to the 6D-Robotic-Couch (RPS base) of the linear accelerator. This is where the medical technology as-

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sistant (MTA) reviews the fine tunings on the patient. As soon as radiotherapy is completed, RPS base will convey the patient back to RPS extended. Once back in the anteroom, the patient may leave the patient platform.

Compatible with all add-ons

Since radiotherapy, as for example in the head and neck area, requires specific fixation by means of masks in order to protect sensitive, adjacent organs such as salivary glands, eyes, brain and spinal cord from being unnecessarily strained, the patient platform by gKteso is prepared for all current add-ons. Vacuum mattresses as well as many other modular positioning aids may be attached to the Radiotherapy Patient System RPS extended.

In 50 to 60 percent of all patients with cancerous disease, radiotherapy is part of the therapy plan in the course of their treatment. One of several methods is irradiation with a linear accelerator. gKteso GmbH is a mid-size company located in Bobingen near Augsburg, Germany, specializing in the development of RPS (Radiotherapy Patient System). About 25 years ago, Guido Kübler, mechanical engineer, founder and Managing Director of the company, started with the development and manufacturing of electronically controlled patient platforms for various applications. In distribution, the company is classic OEM to distinguished international partners. For more information please visit www.radiotherapy-patient-system.com

About gKteso:

gKteso specializes, among other areas, in the development of patient platforms with 6D-control for radiotherapy with linear accelerators. With RPS base and RPS extended, gKteso is now entering the international medical technology market. About 25 years ago, mechanical engineer Guido Kübler, founder and Managing Director of the company, started with the development and manufacturing of electronically controlled platforms for various applications. As a classic OEM, the company is distributor to distin-

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guished international partners. The patient platform RPS extended by gKteso convinces both clinics and medical centers with numerous features making radiotherapy with linear accelerators more efficient and more comfortable for the patient. The accurate and reproducible positioning as well as the quality of patient fixation represents a substantial aspect. Another important advantage is the efficiency of this innovative system, as with RPS extended up to three patients can be simultaneously prepared for radiotherapy with linear accelerator by means of a specific satellite system.

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