

# Parastomal hernia: investigation and treatment

**Pia Näsvall**

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**Department of Surgical and Perioperative Sciences**  
Umeå University  
SE-901 87 Umeå, Sweden  
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## Abstract

**Background** Parastomal hernia is a common stoma complication causing the patient considerable inconvenience. The patient becomes aware of a bulge around the stoma, but a bulge is not always a parastomal hernia and diagnostics must be performed to enable differential treatment. It is difficult to distinguish between a bulge and a hernia. Results based on clinical examination and computerised tomography (CT) in the supine position, have not been convincing. Three-dimensional intrastomal ultrasonography (3D US) is a novel technique shown to be promising in the assessment of stoma complaints. Two studies were performed to determine inter- and intra-observer reliability as well as the validity of 3D US as an alternative to CT when assessing stoma complaints. There are numerous options for the treatment of parastomal hernia, but none has been shown superior. In the recent decades the use of mesh in the repair of incisional and inguinal hernia has become routine. New materials must be evaluated as there are potential morbidity and even mortality risks with mesh repair. As recurrence of a parastomal hernia is an even greater challenge, the method of choice should have a low risk for recurrence. A prospective multicenter study was performed to evaluate safety and recurrence rate when using Parastomal Hernia Patch BARD™ (PHP), a mesh specially designed for parastomal hernia repair. A stoma has a profound impact on the patient's daily life, both physical and psychological. A parastomal hernia with its associated risk for leakage and incarceration worsens the situation. Patient driven assessment of healthcare outcome is important if we are to improve medical care. A quality of life (QoL) survey was performed to assess the impact of parastomal bulging and hernia on the patient's daily life.

**Methods** Forty patients were investigated and the 3D US images were twice evaluated by two or three physicians to assess inter- and intra-observer reliability. Totally 20 patients with stoma complaints requiring surgery were examined with CT and 3D US prior to surgery. The findings were compared with the intraoperative findings – regarded as the true outcome. Fifty patients with parastomal hernia requiring surgery were enrolled from three hospitals. Patients were followed up one month and one year after repair using PHP. Patients still alive in 2008 who had been operated between 1996 and 2004 for rectal cancer in Uppsala/Örebro-, Stockholm/Gotland-, and Northern Regions (986 patients) and registered in the Swedish Rectal Cancer Registry (SRCR) were invited to fill in four QoL questionnaires.

**Results** Inter-observer agreement using 3D US reached 80% for the last 10 patients examined, with a kappa value of 0.70. Intra-observer agreement for two examiners was 80% and 95%. The learning curve levelled out at 30 patients. Both CT and 3D US showed high sensitivity and specificity when compared with intraoperative findings. After surgery for parastomal hernia with a PHP, the complication rate at one month was 30% and recurrence rate at one year was 22%. Twelve patients were reoperated within one year. In the QoL study, 31.5% of the patients with a stoma reported a bulging or a hernia. 11.7% had been operated for parastomal hernia. A hernia or a bulge gave rise to significantly more pain and impaired stoma function. Overall QoL was inferior in patients with a permanent stoma compared to a group without a stoma.

**Keywords:** Parastomal, hernia, 3D US, ultrasonography, mesh, QoL, rectal cancer, stoma

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