**Scholars Journal of Medical Case Reports** **ISSN 2347-6559 (Online)**
Sch J Med Case Rep 2017; 5(2):71-72 **ISSN 2347-9507 (Print)**

(An International Publisher for Academic and Scientific Resources) DOI: 10.36347/sjmcr.2017.v05i02.001

# Computed tomographic peritoneography for diagnosing scrotal leakage in a patient on continuous ambulatory peritoneal dialysis

**Irem PEMBEGUL YIGIT[1], Tuna SAHIN[2]**
[1]Department of Nephrology, Malatya Education and Research Hospital, Malatya, Turkey
[2]Department of Radiology, Malatya Education and Research Hospital, Malatya, Turkey

***Corresponding author**
Irem PEMBEGUL YIGIT
Email: pembegulmd@yahoo.com

**Abstract:** Continuous ambulatory peritoneal dialysis (CAPD) is a safe and effective modality of renal replacement therapy in patients with end-stage renal disease (ESRD). Genital edema is an uncommon complication of CAPD and the swelling is developing suddenly and painless in the scrotum, penis or labia major. The most common cause is fluid extravasation from an indirect hernial sac or patent processus vaginalis (PPV). Computed tomographic (CT) peritoneography is useful imaging method for these patients.
**Keywords:** Scrotal edema, patent processus vaginalis, computed tomographic (CT) peritoneography.

## INTRODUCTION

Genital edema is an uncommon complication in continuous ambulatory peritoneal dialysis (CAPD) patients (4-10%) [2, 3]. The most common cause is fluid extravasation from an indirect hernial sac or patent processus vaginalis (PPV). Peritoneal dialysis (PD) is associated with intermittent abdominal distension and increased intraabdominal pressure. During PD fluid entered the sac and then leaked out into surrounding tissues to form edema as a result of increased hydrostatic pressure exceeding the osmotic pressure of the dialysate. Computed tomographic (CT) peritoneography is useful imaging method for these patients. We present a case of PPV in a male patient who was on CAPD for a long time and diagnosed with CT peritoneography after development of scrotal edema.

## CASE REPORT

A 46- year old man with end-stage renal disease (ESRD) due to hypertensive nephropathy started continous ambulatory peritoneal dialysis (CAPD) and successfully used for 20 months without complications (three daily exchange of 1.36 % glucose and one night exchange of 7.5 % icodextrin). He admitted to emergency service with generalized scrotal edema without redness or tenderness for three days. He has developed ultrafiltration failure for one month. On admission, physical examination findings were a tender swelling at scrotum and hypertension (165/95 mmHg). Ultrasound examination of the scrotum releaved skin and underskin edema only. He was hospitalized, recommended bed rest and scrotal elevation. CAPD was temporarily stopped and replaced by hemodialysis. Peritoneal equilibration test (PET) revealed high-average transport (Dialysate/plasma creatinine= 0.71). A computed tomographic (CT) peritoneography scan performed revealed free passage of contrast material into the left inguinal canal, and a diagnosis of left patent processus vaginalis (PPV) was made (Figure 1). He refused surgical management. Complete resolution of the scrotal edema occurred within four days and PD was started after 6 weeks with automated PD. The patient is on maintanence APD treatment for three months without any complication.

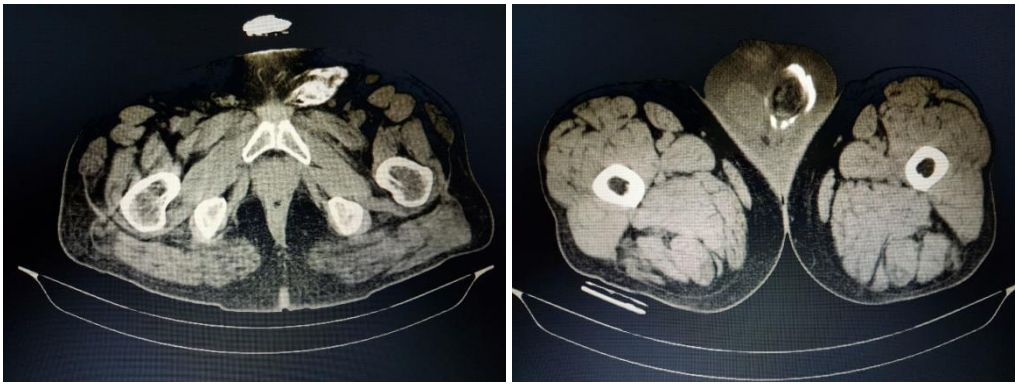
## DISCUSSION

CAPD is becoming more important in the management of patients with end-stage renal disease (ESRD) and is especially indicated for patients who are unable to tolerate hemodialysis because of age, diabetes, vascular access problems or cardiovascular conditions. CAPD is slower and continuous treatment; additionally the weekly solute clearances approach those with hemodialysis [1]. PD has been reported to be associated with preserved residual kidney function, reduced infection risk and improved patient satisfaction. Some patients develop complications that can interrupt CAPD therapy, such as, peritonitis, dialysate leakage, inguinal or ventral hernia, catheter malfunction and genital edema. Early dialysate leakage most often manifests as a pericatheter leak. Late diyalisate leaks may present with ultrafiltration failure peripheral or genital edema. Genital edema is an uncommon but well documented complication in CAPD patients (4-10%) [2, 3]. It may manifest shortly after CAPD is instituted or several months or years later. Diagnosis of the etiology can be difficult. CAPD is associated with intermittent abdominal distension and increased intra-abdominal pressure This phenomenon has been associated with extravasation of dialysate from the peritoneal cavity through a defect in the abdominal wall

or an inguinal hernia or patent processus vaginalis (PPV). Obesity, jogging, caugh and tension can cause hernia and leakage by increasing intraabdominal pressure, multiple surgical interventions, hypothyroidism, multiparity, steroid treatment, advance age and early catheter insertion are other predisposan factors [4].

For patients in whom acute scrotal edema develops while they are receiving CAPD, different imaging techniques have been tried, such as ultrasonography, peritoneal scintigraphy, computed tomographic (CT) peritoneography and magnetic resonance peritoneography [5,6]. CT peritoneography is useful in diagnosing the etiology of genital edema and allows anatomical details for planning surgical management. Additionally, diagnostic laparoscopy is accurate in confirming the etiology of inguinal hernia or PPV, especially when CT peritoneography is equivocal [7].

Consequently, CAPD patients who admitted with genital edema, with suspicion of PPV the diagnosis must be confirmed with CT peritoneography.



**A** **B**

**Fig-1: Computed tomographic (CT) peritoneography shows right patent processus vaginalis and contrast within the inguinal canal (A) and scrotum (B)**

**REFERENCES**


1. Waldum-Grevbo B, Leivestad T, Reisæter AV, Os I. Impact of initial dialysis modality on mortality: a propensity-matched study. BMC nephrology. 2015 Oct 30; 16(1):179.
2. Good VS, Kirkwood PL. Advanced Critical Care Nursing. Elsevier Health Sciences; 2017 Mar 1.
3. Blake PG, Bargman JM, Brimble KS, Davison SN, Hirsch D, McCormick BB, Suri RS, Taylor P, Zalunardo N, Tonelli M, Canadian Society of Nephrology Work Group on Adequacy of Peritoneal Dialysis. Clinical practice guidelines and recommendations on peritoneal dialysis adequacy 2011. Peritoneal Dialysis International. 2011 Mar 1; 31(2):218-39.
4. Leblanc M, Ouimet D, Pichette V. Dialysate leaks in peritoneal dialysis. InSeminars in dialysis 2001 Feb 1 (Vol. 14, No. 1, pp. 50-54). Blackwell Science Inc.
5. Hawkins SP, Homer JA, Murray BB, Voss DM, van der Merwe WM. Modified computed tomography peritoneography: clinical utility in continuous ambulatory peritoneal dialysis patients. Australasian radiology. 2000 Nov 12; 44(4):398-403.
6. Stuart S, Booth TC, Cash CJ, Hameeduddin A, Goode JA, Harvey C, Malhotra A. Complications of Continuous Ambulatory Peritoneal Dialysis 1. Radiographics. 2009 Mar; 29(2):441-60.
7. Haggerty SP, Jorge JM. Laparoscopy to evaluate scrotal edema during peritoneal dialysis. JSLS: Journal of the Society of Laparoendoscopic Surgeons. 2013 Jul; 17(3):429.