

# A Giant Parietal Wall Hematoma Conservatively Treated Following Laparoscopic Appendectomy

## *Laparoskopik Apendektomi Sonrası Konservatif Tedavi Edilen Dev Paryetal Duvar Hematomu*

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### ÖZET

Laparoskopik apendektomi güvenilirliğini kanıtlamış cerrahi tekniklerden biri haline gelmiştir. Ancak açık apendektomi ile kıyaslanabilen avantaj ve dezavantajlar barındırmaktadır. Hemorajik komplikasyonlar veress veya trokar yerleştirirken ve işlem sırasında keskin diseksiyon yapılırken gelişebilir. Trokar ile ilişkili karın duvarı damar yaralanmalarına bağlı major kanamalar çok nadirdir. Tanıda gecikme morbidite ve mortaliteyi arttırabilir. Bu olguda Akut apandisit tanısı ile laparoskopik apendektomi yapılan ve postoperatif dönemde hastayı hipovolemiye sokacak karın duvarı hematomu gelişti. Medikal tedavi ile hasta takip edildi. Trokar yerinden hastanın kliniğini bozacak kanamalar olabileceği akılda tutulmalıdır.

*Anahtar Kelimeler:* Apendektomi, Laparoskopi, Hematom

### ABSTRACT

Laparoscopic appendectomy has become of the surgical techniques with proven safety. It, however, has some advantages and disadvantages comparable to open appendectomy. Hemorrhagic complications may develop during the placement of veress or trochar and while accomplishing sharp dissection during the procedure. Major bleeding caused by abdominal wall vein damage related to trochar is very rare. Delayed diagnosis may increase morbidity and mortality. The patient, who had laparoscopic appendectomy diagnosed with acute appendicitis, developed abdominal wall hematoma that gave way to hypovolemia in the post-op period. The patient was followed-up with medical treatment. It should be kept in mind that there might be bleeding from the trochar site that would upset the patients' clinical condition.

*Key words:* Appendectomy, Laparoscopy, Hematoma

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### Introduction

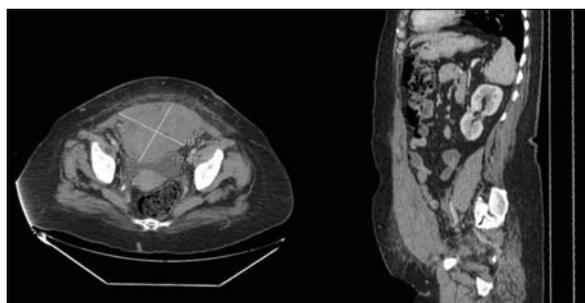
Laparoscopy is a technique that can be used successfully and safely in many surgical methods. Recent studies have established that laparoscopic appendectomy was superior to open appendectomy when evaluated with regards to period of infection, hospitalization, complications like post-op pain, and especially regarding its diagnostic uses in young female patients.<sup>1,2</sup> Although laparoscopic appendectomy is an accepted procedure even experienced surgeons might come across complications.<sup>3</sup> Abdominal wall vein damages might be seen following laparoscopic procedures but great abdominal wall hematomas are rarely formed. They are formed as a result of the damage seen in the epigastric veins during the placement of the trochar and they generally have a good post-op prognosis (or mild morbidity).<sup>4</sup> We aim to present the case of a patient who had bleeding into the preperitoneal area that upset the clinical condition of the patient following appendectomy.

### The Case

The 49-year-old female patient presented to our clinic with complaints of abdominal pain that started 12 hours before in the abdomen later expanding into the right lower quadrant and vomiting. The patient had no appetite and no fever. Her abdominal examination revealed widespread sensitivity especially in the right lower quadrant, rebound, and muscular defense. Rectal examination revealed nothing specific.

Routine blood work showed no characteristic except the fact that the level of white cells was  $17.200/\text{mm}^3$ . Minimal fluid and non-compressed 8 mm lesion in line with appendicitis with blind ending were defined in the abdominal ultrasonography. The patient who was diagnosed with appendicitis had laparoscopic appendectomy procedure. The trochars were removed guided by camera and it was seen that there was no bleeding. 4 hours after the procedure the patient had hypotension and tachycardia and was taken into intensive care. It was seen that her hemoglobin value decreased from 11 gr/dl to 8 gr/dl. Emergency bedside ultrasonography (USG) was performed upon observing that there was no bleeding from the current drain. The USG revealed no intra-abdominal bleeding. It was stated, however, that the evaluation was done in sub-optimal conditions because of intra-abdominal gas. The patient was given 2 units of erythrocyte suspension. Her

hemoglobin value was elevated to 9 gr/dl. The abdominal computerized tomography (CT) revealed a hematoma of 13x12x10 cm on the parietal peritoneum under the rectus muscle (Fig. 1, 2).



*Figure 1-2. Computed tomography scan on postoperative day 2 shows a significant hematoma in the abdominal wall (13x12 cm). No hemoperitoneum is present.*

One more unit of erythrocyte suspension was administered to the patient in order to get the hemoglobin value to 10 gr/dl. The patient stabilized in 24 hours and was discharged after 48 hours.

### Discussion

There is an ample number of articles in literature on abdominal wall hematoma. Widening abdominal wall hematoma might take place following blunt abdominal trauma. Spontaneous abdominal wall hematomas, on the other hand, might be caused by the extreme tension in abdominal wall muscles, vein wall weakness, or anti-coagulant use.<sup>5,6</sup>

Bleeding from the trochar area is a virtually frequent complication following laparoscopic procedures. But hemoperitoneums that might lead to another emergency surgical procedure or to giant hematomas on the abdominal wall are very rare.<sup>7</sup> Bleeding into the abdominal cavity or giant abdominal wall hematoma might lead to blood transfusion, prolongs hospitalization, and emergency surgical procedures.<sup>8</sup> Previous articles reported that the rate of minor or self-limiting bleeding taking place during the placement of the trochar was 0.21%.<sup>9,10</sup> Though rare, major vascular injuries were also reported. Very few of them were epigastric artery injuries.<sup>9</sup>

In order to reduce the incidence of abdominal wall vein injuries abdominal wall and the progress of the blood veins should be very well known, translumination should be done in patients who are not obese, the trochar should

be opened up with a right angle to reduce the risk of tissue trauma, and the smallest trochar that can carry out the procedure should be chosen.<sup>4</sup> We used 3 trochar entry points with our case. These are: the 10 mm one where the on-belly camera was placed, the 10 mm working trochar placed from the right lower quadrant, and the 5 mm traction trochar placed over the symphysis pubis. The bleeding was caused by the trochar placed from the right inguinal area. Transillumination could not be made use of since our patient was obese.

Abdominal wall bleedings can be taken under control through various methods. Hemostasis can be achieved by deep sutures on the trochar entry point or by the blowing up of a Foley catheter pushed forward from this area. If these methods fail, exploration of the bleeding area is needed.<sup>8,10</sup>

Bleeding may not be recognized during the procedure because the trochar and pneumoperitoneum may tamponize this bleeding. Bleeding should be taken into consideration upon the formation of hematoma on the abdominal wall or blood dripping into the abdominal cavity from the edge of the trochar.<sup>10</sup> No hematoma outlook or a point bleeding into the abdomen from the

edge of the trochar was observed during the procedure. There were no examination symptoms since the bleeding was into under the fascia over the peritoneum. Conservative<sup>4</sup>, selective artery embolization<sup>7</sup>, or surgical procedures<sup>9</sup> can be used in the treatment of giant hematomas formed on the abdominal wall following laparoscopic appendectomy. We decided to treat our patient conservatively because the patient was hemodynamically stable and the hematoma did not enlarge following its detection. Wide spectrum antibiotic treatment was initiated in order to prevent hematoma infection.

In conclusion, trochars may lead to abdominal wall injuries. After the operation if we should control trochar entry holes, we could early to know complication of trochar entry hole bleeding. Active bleeding may cause abdominal wall hematomas of a large scale before it limits itself. CT can reveal this active bleeding in the early period. Trochar injuries in laparoscopic surgery are avoidable complications. Hemodynamically stable patients with non-growing hematomas can successfully be treated conservatively without having to resort to a second surgical procedure.

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