

# RESULTS OF SURGICAL TREATMENT IN PATIENTS WITH SECONDARY DIFFUSE PERITONITIS



Author: Alon Ushman Supervisor: MUDr. Josef CHUDÁČEK Ph.D.

Department of Surgery I, Faculty of Medicine and Dentistry, Palacký University and University Hospital Olomouc

## Introduction

**Secondary bacterial peritonitis** is a serious life threatening complication characterized by infection and inflammation of the peritoneum. [1]  
The peritonitis develops due to pre-existing **intraabdominal lesion**, such as perforation of hollow viscus, abdominal inflammation (e.g. appendicitis), and abdominal trauma.  
Secondary bacterial peritonitis is second leading cause of sepsis in patients in intensive care unites worldwide. Overall **mortality is 6%**, but **mortality rises to 35%** in severe septic patients. [2]

## Objectives

The aim of our work was to evaluate the surgical management techniques for patients with secondary diffuse peritonitis.

## Methodology

A total of **33 patients** were treated for **secondary bacterial peritonitis**. We evaluated patient's **medical history, surgical findings, microbiological examinations** and the level of **mortality, morbidity**. We used 3 commonly used scoring systems **qSOFA, American Society of Anesthesiologists (ASA) physical score, Mannheim Peritonitis Index (MPI)** for the comparison of **Negative pressure wound therapy (NPWT)** to **surgical lavage therapy**

## References

- [1] Špička, P.; Chudáček, J.; Řezáč, T.; Starý, L.; Horáček, R.; Klos, D. Prognostic Significance of Simple Scoring Systems in the Prediction of Diffuse Peritonitis Morbidity and Mortality. *Life* 2022, 12, 487.  
[2] Ross JT, Matthay MA, Harris HW. Secondary peritonitis: principles of diagnosis and intervention. *BMJ*. 2018 Jun

## Results

**16 (48,5%)** patients were treated with **Negative pressure wound therapy NPWT** and **17 (51,5%)** were treated with **lavage**. The **median age** for NPWT patients and lavage patients (**69 vs. 71**), the **median abdominal surgeries** performed (**2vs1**). **Microbiological agents** were observed **similarly in both groups** (87.5% vs 88.2%), while the most common infection was **E.Coli** (56,3% vs 52,9%). Higher mortality was observed in NPWT compared to lavage (31,3% vs 17,6%).

Table 1. scoring system (ASA, qSOFA, MPI) compared with mortality

		Lavage	NPT
American Society of Anesthesiologists (ASA) physical score	I	5,9%	6,3%
	II	52,9%	43,8%
	III	29,4%	43,8%
	IV	11,8%	6,3%
qSOFA		17,6%	31,3%
Mannheim Peritonitis Index (MPI)	I	17,6%	12,5%
	II	58,8%	50,0%
	III	23,5%	37,5%
Death		17,6%	31,3%

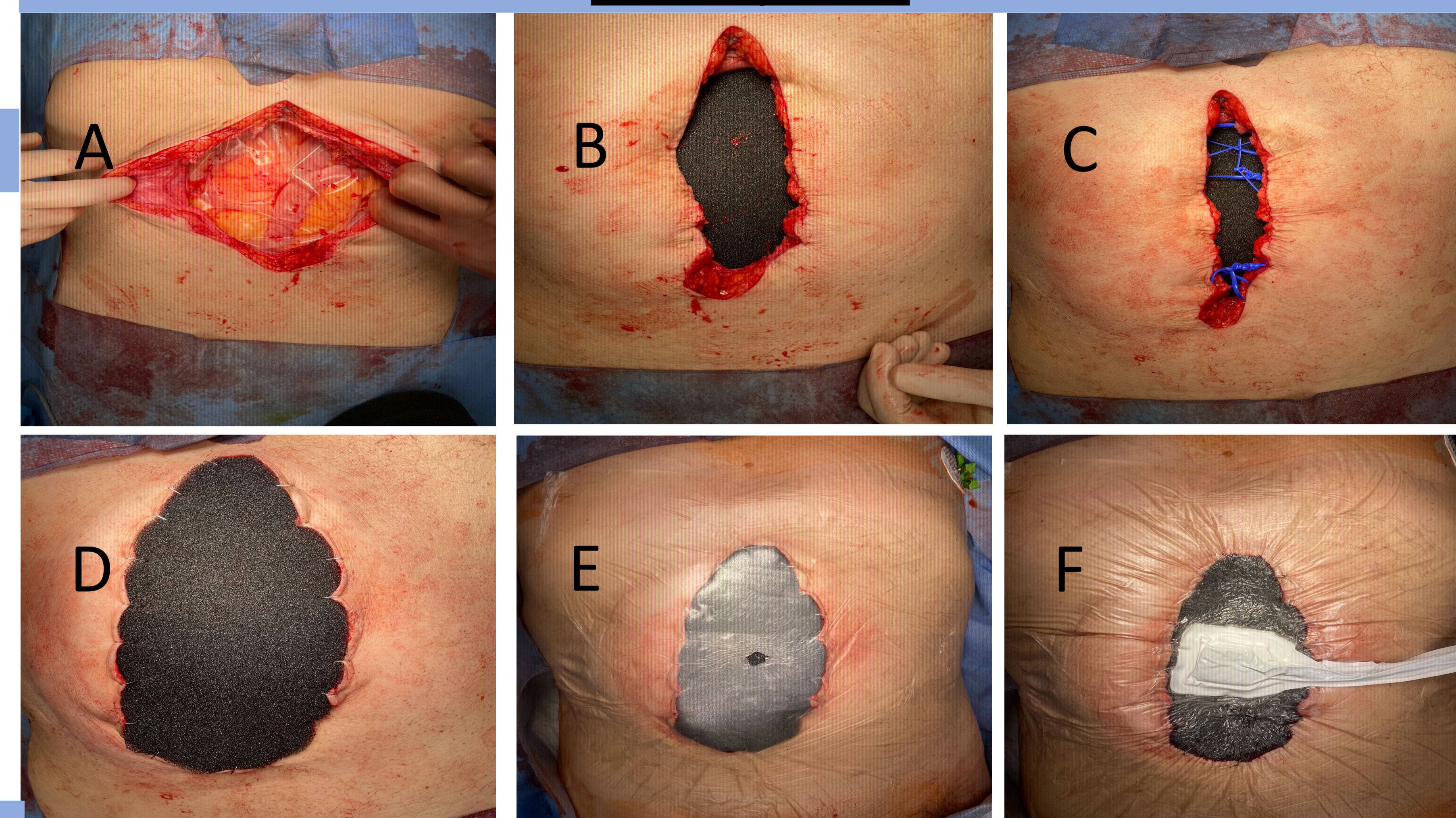
Table 1:  
The median **qSOFA** was more significant in NPWT patients (31,3% vs 17,6%).

Table 2. patients comorbidity compared with the mortality

	Lavage	NPT
Overall morbidity	58,8%	68,8%
Hypertention	58,8%	75,0%
Cardiovascular	29,4%	37,5%
Pulmonary	23,5%	12,5%
Diabetic	41,2%	18,8%
Hepatopancreatic	17,6%	12,5%
Malignancy	23,5%	37,5%
Renal	11,8%	6,3%
2 or more comorbidities	52,9%	81,3%
Death	17,6%	31,3%

Table 2:  
Higher median morbidity observed in NPWT patients (68,8% vs 58,8%), as well as 2 or more co-morbidities (81,3% vs 52,9%).

## NPT system



**Image A:**  
Folia, fenestrated clear layer-  
-preventing development of fistulas in abdominal cavity

**Image B:**  
NPWT sponge

**Image C:**  
Dynamic fascia suturing. Improving secondary closure of abdominal cavity and preventing developing of abdominal hernia

**Image D:**  
Second layer of NPWT sponge

**Image E:**  
Second layer of fenestrated folia-  
-isolating abdominal cavity from the surroundings

**Image F:**  
Application of special negative pressure tube  
**Credit:** MUDr. Josef CHUDÁČEK Ph.D.

## Conclutions

We observed **higher mortality** of the NPWT group which could be explained by **worse prognostic score** and by **more complicated clinical picture**.

The medical staff reported **additional advantages** of NPWT which includes **protection** of abdominal viscera, **decrease bowel edema**, decrease incidence of abdominal compartment syndrome and bowel fistulas. NPWT method minimize the surgical revisions needed, re-dressing, cost and discomfort of the patients.

## Aknolegments

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