
DISEASE STRUCTURE AND TREATMENT RESULTS OF PATIENTS AT THE DEPARTMENT OF SPINAL TRAUMA AND ORTHOPEDICS, MILITARY CENTRAL HOSPITAL 108, FROM 2017 TO 2021

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ABSTRACT

Purpose: We aimed to describe the disease structure and the results of treatment of the inpatients at the Department of Spinal Trauma and Orthopedics, Military Central Hospital 108, from 2017 to 2021.

Methods: Retrospective, cross-sectional descriptive study.

Results: The majority of the patients were aged 16-59 (the rate from 2017 to 2021 was 63.8%; 58.91%; 54.84%; 53.49%; 54.1% respectively). The patients covered by health insurance accounted for a high proportion with an increasing trend (from 90.12% in 2017 to 97.06% in 2021). The rate of the patients undergoing surgical treatment in each year was higher than the rate of patients undergoing internal treatment; in five years the rate of the patients indicated for surgical treatment was 73.70%, and indicated for internal treatment was 26.30%. The annual rate of the patients indicated for special surgery and type 1 surgery was 96% and over; the highest rate was 98.30% (in 2020). The results of the treatment from 2017 to 2021: the rate of the patients recovering and reducing disease was 98.5%, 98.3%; 99.5%; 98.9%; 99.1% respectively. The mortality rate of the patients in 2017 and 2020 was $\leq 0.1\%$, especially, in 2018, 2019 and 2021 there were no deaths.

Keywords: Disease structure, trauma and orthopedics, Military Central Hospital 108.

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1. INTRODUCTIONS

The Department of Spinal Trauma and orthopedics, Institute of Traumatology and Orthopedics, Military Central Hospital 108 was established in 2007, it is the highest line in the system of medical examination, emergency admission, and treatment of patients with spinal injuries or spinal diseases [5]. For many years, the professional work at the Department had been always cared for by leaders and commanders at all levels and the team of medical doctors and nurses at the Department, seriously and successfully completed the task of medical examination and treatment for the soldiers and the people, demanding the increasing health care requirements of the whole society.

Determining the real situation of the disease's structure, the results of treatment, and some related factors of the patients at the Department of Spinal Trauma and Orthopedics, Military Central Hospital 108 in the past 5 years (from 2017 to 2021) is the necessary scientific basis, helping the unit continue to orient and make the plan of Department

development, demanding the requirements of the mission in the following years.

Starting from the above fact, we carried out this study to describe the disease's structure and the results of treatment of the inpatients at the Department of Spinal Trauma and Orthopedics, Military Central Hospital 108, from 2017 to 2021, as a basis for proposing solutions in orientation and development of the Department of Spinal Trauma and Orthopedics in the following years.

2. SUBJECTS AND METHODS

2.1. Subjects

There were 4,904 inpatients treated at the Department of Spinal Trauma and Orthopedics, Institute of Traumatology and Orthopedics, Military Central Hospital 108, from January 2017 to December 2021 (The patients with full medical records stored in the hospital management software system from May to June 2022).

Excluding patients who were not treated for spinal diseases; patients with a diagnosis that

did not match the disease code in ICD-10 (from code M40 to M54), patients with medical records that did not have enough information, or patients who voluntarily quit treatment.

2.2. Methods

- Study design: Retrospective study, cross-sectional description
- Sample size: apply the sampling method of all inpatients at the Department of Spinal Trauma

and Orthopedics, Military Central Hospital 108 from 2017 to 2021, medical records with research information.

- Study ethics: the study topic was completely for scientific purposes. The collected data was guaranteed to be honest and accurate. The patient's information was kept confidential and used for research purposes only.
- Data processing: using Excel software and SPSS 20.0

3. RESULTS AND DISCUSSION

- Distribution of the patients by age group:

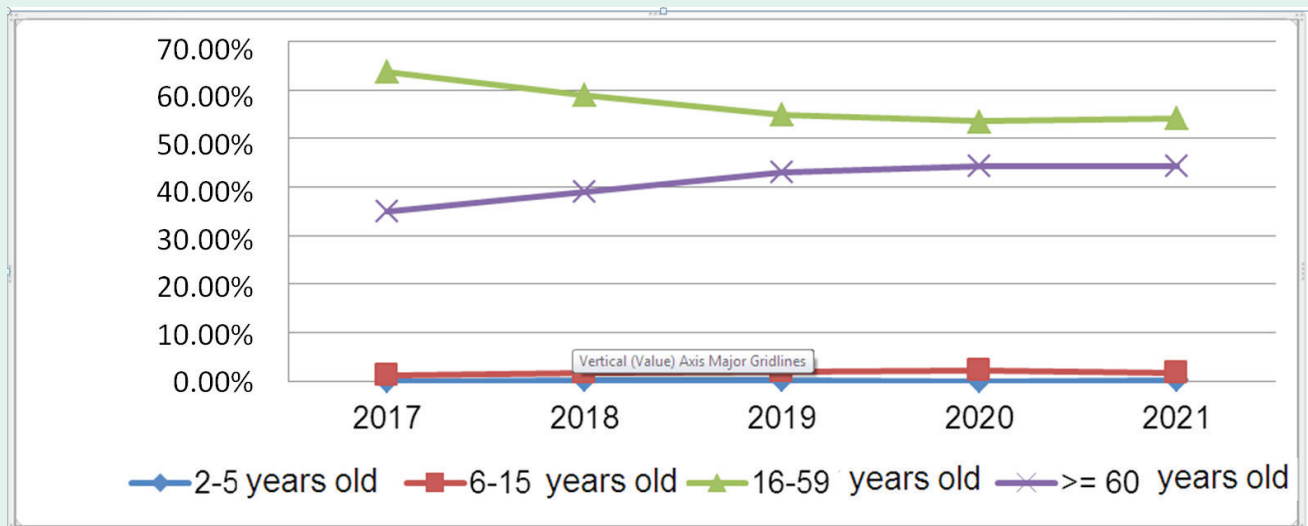


Figure 1. Distribution of patients by age group

We divided the study patients into five age groups (from 2-5 years old, 6-15 years old, 16-59 years old, and ≥ 60 years old). The results showed that the majority of the patients were distributed between the ages of 16-59 and ≥ 60 , in which the group of patients aged 16-59 years accounted for the highest proportion (from 2017 to 2021, respectively, the rate was 63.8%; 58.91%; 54.84%; 53.49%; 54.10%).

- Distribution of the patients by sexes:

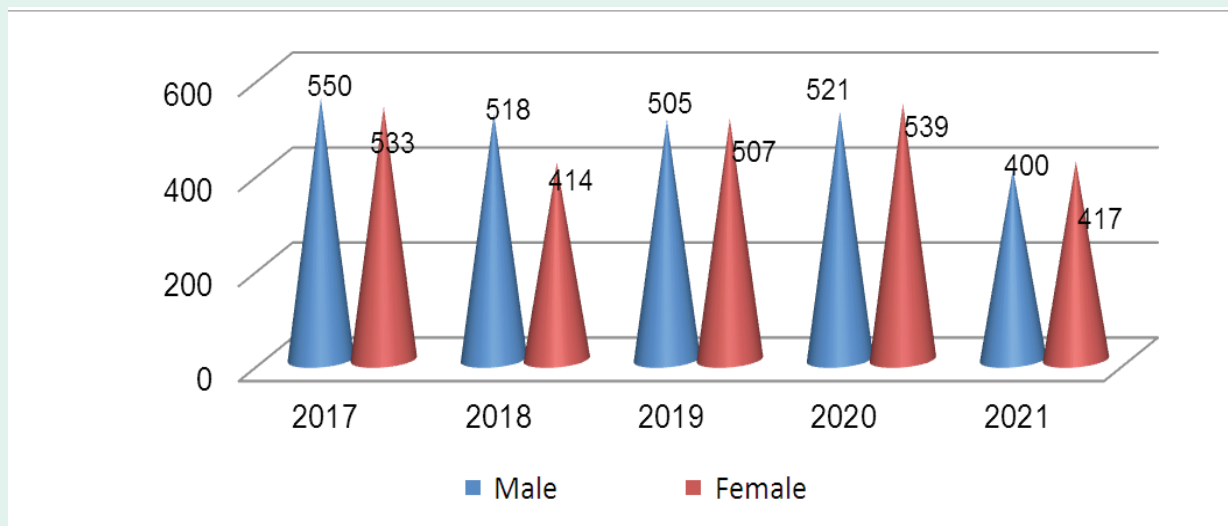


Figure 2. Distribution of patients by sexes

We found that there was not much difference in the sex ratio of inpatients over the years.

- Distribution of patients by the form of service payment:

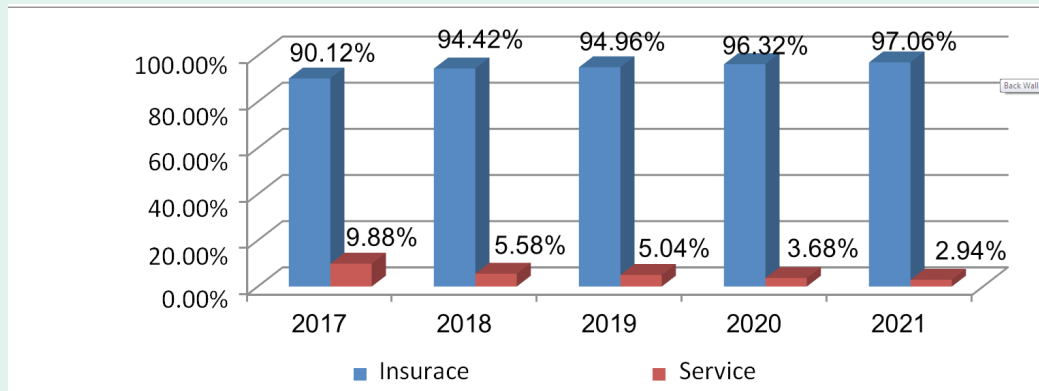


Figure 3. Distribution of patients by the form of service payment

The majority of patients have health insurance to pay for medical services (the rate was over 90% over the years), and this trend increased gradually from 2017 (90.12%) to 2021 (97.06%).

- Distribution of patients by indications for treatment:

Table 1. Distribution of patients by indications for treatment

Year	Surgery	Internal med.	Total
2017	747 (68.98%)	336 (31.02%)	1,083 (100%)
2018	665 (71.35%)	267 (28.65%)	932 (100%)
2019	730 (72.13%)	282 (27.87%)	1,012 (100%)
2020	825 (77.83%)	235 (22.17%)	1,060 (100%)
2021	645 (78.95%)	172 (21.05%)	817 (100%)
Total	3,612 (73.7%)	1,292 (26.3%)	4,904 (100%)

There 3,612 patients (73.70%) were indicated for surgical treatment, and 1,292 patients (26.30%) were indicated for internal treatment. The number of patients undergoing surgical treatment each year was higher than patients undergoing internal treatment. The percentage of surgical patients increased gradually from 2017 to 2021, with the rate of 68.98%, 71.35%; 72.13%; 77.83%; 78.95% respectively.

The most common diseases at the Department:

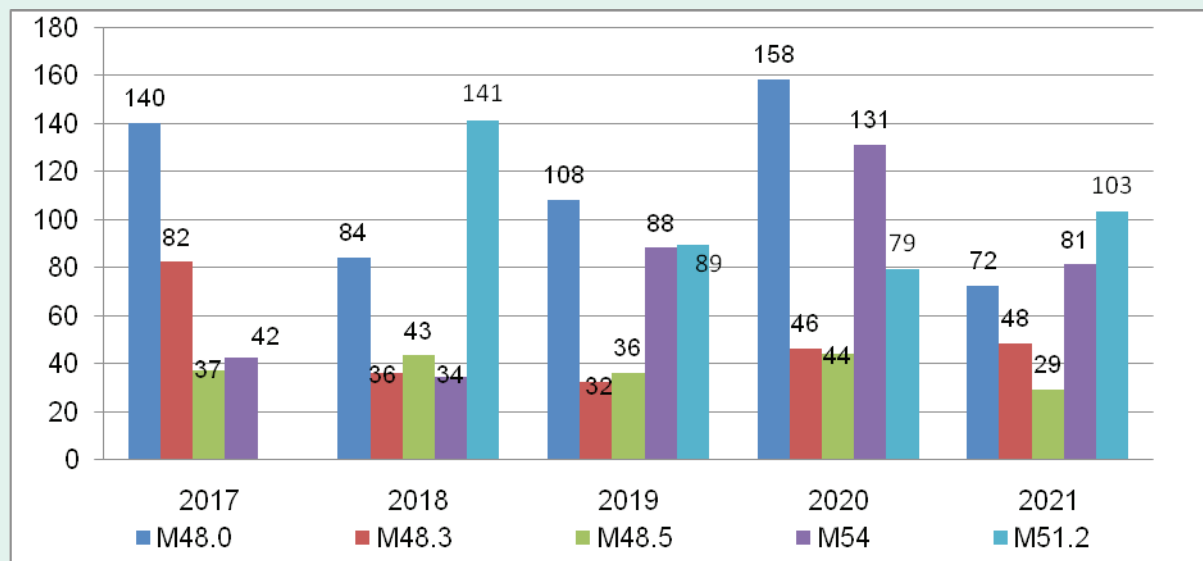


Figure 4. The most common diseases

The most common diseases at the Department were: M48.0 (spinal stenosis), M48.3 (spinal trauma),

M48.5 (collapsed vertebra, not elsewhere classified), M51.2 (other specified spinal disc displacement), M.54 (dorsalgia). In the five years, there were 1,783 patients treated for these five diseases, in which the most common code is M48.0 (562/1,783 patients, accounting for 31.52%) and disease code M51.2 (412/1,783 patients, accounting for 23.11%).

The diseases with the most surgical intervention (Figure 5): The five most surgical interventions we encountered were: M41 (scoliosis), M48.3 (spinal trauma), M54 (dorsalgia back), M51.2 (other specified spinal disc displacement), M48.0 (spinal stenosis), in which scoliosis was not among the five common diseases at the Department:

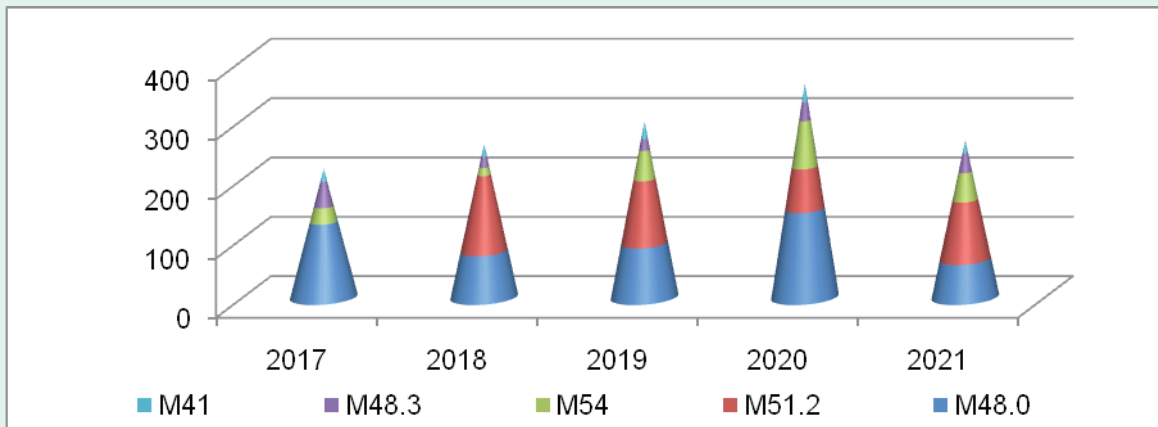


Figure 5. The most surgical pathologies

Type of surgeries performed at the Department:

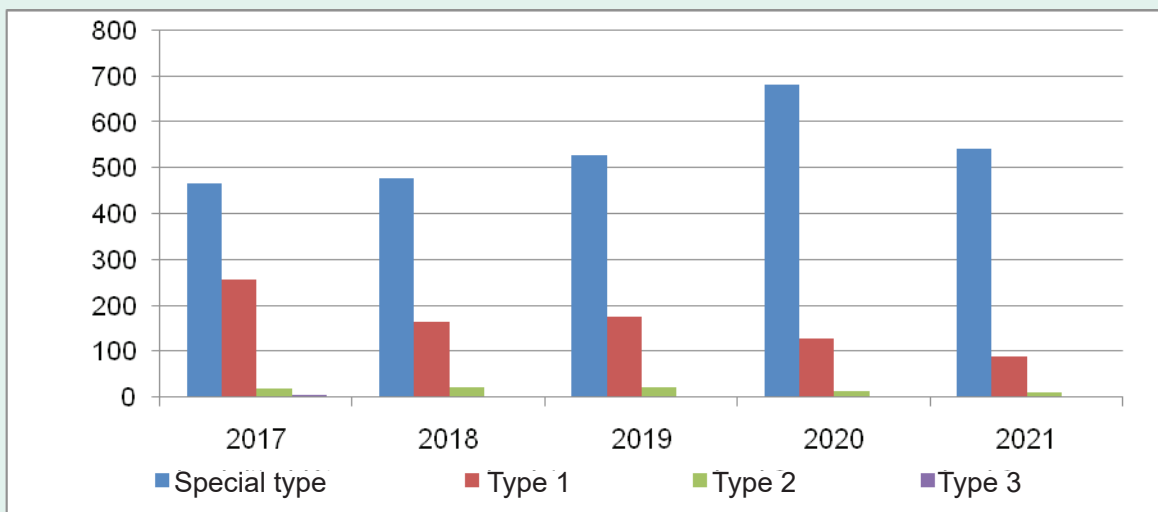


Figure 6. Classification of surgeries in patients

Most surgeries were special type and type 1 surgeries, of which in 2020 the special surgeries encountering the highest rate (98.3%).

Table 2. Length of hospital stay of patients

Length of hospital stay	Surgery					Internal medicine				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
From 1-5 days	15	18	13	15	25	42	44	43	36	30
From 6-10 days	254	248	250	283	257	124	80	88	87	71
More 10 days	478	399	467	527	363	170	143	151	112	71
Average (days)	15	13	15	16	11	6	5	5	4	2

Most of the patients had a treatment time of 6 days or more. The mean length of hospital stay of the patients with internal treatment was lower than that of the surgical patients.

Table 3. Results of the treatment

Results	2017	2018	2019	2020	2021
Recovered	699 (64.5%)	659 (70.7%)	663 (65.5%)	672 (63.4%)	408 (49.94%)
Improved	368 (34.0%)	257 (27.6%)	344 (34.0%)	376 (35.5%)	402 (49.20%)
No change	7 (0.6%)	13 (1.4%)	4 (0.4%)	8 (0.8%)	5 (0.61%)
Seriously	1 (0.1%)	2 (0.2%)	0	2 (0.2%)	2 (0.24%)
Dead	0	1 (0.1%)	1 (0.1%)	1 (0.1%)	0
Refuse Treatment	8 (0.7%)	0	0	1 (0.1%)	0
Total	1,083 (100%)	932 (100%)	1,012 (100%)	1,060 (100%)	817 (100%)

The results of treatment over the years (from 2017-2021) showed that the rate of the patients recovered and improved was over 98.5% (in 2017: 98.5%; in 2018: 98.3%; in 2019: 99.5%; in 2020: 98.9%; in 2021: 99.1%). The mortality rate was \leq 0.1%, especially in 2017 and 2021, there were no cases of patient death.

Spinal trauma and orthopedics is a deep specialization, requiring many complicated specialized techniques, which should be prioritized for the synchronous investment of human resources with appropriate facilities and infrastructure.

The above research data is one of the important scientific bases for planning professional activities of the Department in the following years. In particular, it is necessary to pay attention to the data on the number of patients, the pathological structure, the common diseases, the diseases requiring surgical treatment, the type of surgeries performed at the Department... to continue to have correct orientations in human resource development, medical supplies planning, etc., to demand the requirements of the tasks in the new situation.

4. CONCLUSIONS

Study on the 4,904 inpatients treated at the Department of Spinal Trauma and Orthopedics Institute, Military Central Hospital 108 from 2017-2021, concluded:

- The majority of the patients were distributed between the ages of 16-59 (from 2017 to 2021, respectively; the rate was 63.8%; 58.91%; 54.84%; 53.49%; 54.10%). There was not much difference in the sex ratio of the inpatients. The rate of patients with health insurance was over 90% over the years; this trend increased gradually from 90.12% (in 2017) to 97.06% (in 2021).

- There 73.70% of patients was indicated surgical treatment, and 26.30% indicated internal treatment. The number of patients undergoing surgical treatment each year was higher than patients

undergoing internal treatment. The percentage of surgical patients increased gradually from 2017 to 2021, with the rate of 68.98%, 71.35%; 72.13%; 77.83%; 78.95% respectively.

- In the five years, most surgeries were special type and type 1 surgeries (over 96%), in which, in 2020 the special surgeries encountered the highest rate (98.3%). The rate of the patients recovered and improved from 2017 to 2021 was 98.5; 98.3%; 99.5%; 98.9%; 99.1% respectively. The mortality rate in 2018, 2019, and 2020 was \leq 0.1%, especially, in 2017 and 2021, there were no cases of patient death.

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