**CHAPTER 19**

**Analysis of surgical results of colon cancer in Northwestern Argentina (NOA)**

 A survey was conducted of all patients operated on for colon cancer in the last 5 years in the main health care centers in the northwest of our country, including those who had complete and sufficient data. These were collected by members of the Argentine Society of Coloproctology who work in the provinces of Jujuy, Salta and Tucumán, both at the public and private level. They were:

**San Salvador de Jujuy, Jujuy**

* ***Hospital Pablo Soria***

- Dr. Pablo Jorge, MAAC, MSACP, MATCP

- Dr. Lucia D. Lamas, MAAC

Public and private practice

**Salta**

* ***Hospital San Bernardo***

- Dr. Vicente Borquez, MAAC, MSACP, MATCP

- Dr. Pablo Tacchi, MAAC, MSACP, MATCP

- Dr. Alejandro Sanchez Ruiz, MAAC, MSACP, MATCP

* ***Nuevo Hospital del Milagro***

- Dr. Martin Garcia, MAAC, MSACP, MATCP

Public and private practice

**San Miguel de Tucumán, Tucumán**

* ***Hospital Central de Salud***

- Dr. Susana Bruzzi, MAAC, MSACP, MATCP

- Dr. Audel Closas

Public practice

* ***Sanatorio Modelo***

- Dr. Paula Casares, MAAC, MATCP

- Dr. Hugo Amarillo, MAAC, MSACP, MATCP

Private practice

 The results of this survey are shown in Table 19.1. Patients with metastases were excluded in order to concentrate the data according to the location of the tumor in the colon and because it was considered that patients with colorectal metastases should be part of a report in itself. Data were recorded for 788 patients, 261 from Salta, 71 from Jujuy and 456 from Tucumán. As reported in most of the literature, there was a slight predominance of the male sex (52.5%), except in Jujuy which had an equal distribution by sex.

**Table 19.1.** Characteristics of colon cancer cases treated in the NOA.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Salta** | **Jujuy** | **Tucumán** | **Patients (N)** |
| **Patients (N)** | 261 | 71 | 456 | 788 |
| Sex | MF | 142119 | 3536 | 237219 | 414374 |
| Ostoma | YesNo  | 46215 | 3041 | 115341 | 191597 |
| Emergency | YesNo  | 40221 | 1655 | 71385 | 127661 |
| Type of complication  | PerforationObstructionBleeding | 167265 | 6100 | 14561 | 187926 |
| Endoscopic treatment | YesNo  | 1260 | 368 | 5451 | 9779 |
| Laparoscopy | YesNo  | 21645 | 3140 | 324132 | 571217 |
| Location of the tumor | Splenic flexureLeft colonRight colonTransverse colon | 176211666 | 151134 | 192312024 | 3734433174 |
| Type of surgery | Segmental colectomyExtended colectomyRight colectomyLeft colectomyHartmann´s | 642183690 | 3113355 | 75221513882 | 747431124287 |
| Adjuvant chemotherapy | YesNo  | 18081 | 3140 | 276180 | 487301 |

 The need for emergency surgery was 16% (Salta 15%, Jujuy 22.5%, Tucumán 15%) and the incidence of elective and emergency ostomies was 25.3% (Salta 17%, Jujuy 42%, Tucumán 25%).

 The most frequent complication was perforation (23.7%), followed by obstruction (11.6%) and bleeding (0.7%). When complications were considered proportionally, the incidence was 65.6% for perforation, 32.3% for obstruction and 2.1% for bleeding. The frequency of complications varied in the 3 regions, while in Jujuy and Tucumán obstruction was the first complication, similar to what has been reported in the literature, in Salta there was a strikingly high incidence of perforation (63%).

 Colon cancer treatment was primarily surgical. Endoscopic treatment was possible in only 9 cases (1.1%) in the entire region. The initial approach was laparoscopic in 72% (Salta 82.7%, Jujuy 43%, Tucumán 71%).

 The most frequent location was the left colon, followed by the right colon, transverse colon and splenic flexure. However, it was different by region. In Salta, the most frequent location was the right colon (44%), followed by the left colon, transverse colon and splenic flexure. In Jujuy, the left colon predominated (71%), followed by the right colon, transverse colon and splenic flexure. A similar distribution was found in Tucumán, with the left colon (50.6%), followed by the right colon, splenic flexure and transverse colon.

 The type of surgery was right colectomy (39.3%), left colectomy (30.7%), Hartmann´s procedure (11%) and the same rate of segmental and extended colectomy (9%).

 According to stage, stage I was the least frequent in the region, accounting for 3% of all treated cases, similarly for all sites, with slight variation. Early tumors were not frequent, according to the literature (Table 19.2).

 The distribution of stage II was similar in all sites and subtypes, although there was a slight tendency towards a higher frequency of Stage IIC or T4b, which was the most frequent in Salta and Tucumán.

 Stage IIIC was the most frequent stage III at all sites, with the distribution of cases across all sites being almost similar for stage IIIA and stage IIIB.

**Table 19.2.** Tumor stage of patients treated for colon cancer in the NOA.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Salta** | **Jujuy** | **Tucumán** | **Patients (N)** |
| **Patients (N)** | 261 | 71 | 456 | 788 |
| **Stage I** | T1- T2 N0 M0 | 10 | 2 | 25 | 25 |
| **Stage IIA** | T3 N0 M0 | 13 | 3 | 45 | 61 |
| **Stage IIB** | T4 N0 M0 | 14 | 3 | 43 | 60 |
| **Stage IIC** | T4b N0 M0 | 24 | 1 | 63 | 88 |
| **Stage IIIA** | T1-T2 N1 M0T1 N2 M0 | 696 | 23 | 1799 | 25018 |
| **Stage IIIB** | T3-T4 N1 M0T2- T3 N2 M0T1- T2 N2 M0 | 221415 | 41010 | 676163 | 938588 |
| **Stage IIIC** | T4 N2 M0T3- T4 N2 M0T4 N1-N2 M0 | 86624 | 671 | 351848 | 4925733 |