

AMBULATORY SURGERY

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Management Issues in Day Surgery



**Proceedings of the 2nd
virtual meeting of the
International Association
for Ambulatory Surgery
April 2021**

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Editorial

Mark Skues, Editor-in-Chief

Stimulated by ongoing travel limitations due to the COVID pandemic, the International Association for Ambulatory Surgery convened a second online symposium on 10th April 2021. Like the previous one last October, abstracts were solicited for presentation the following week, on 17th April. Presentations were judged on the day, and I'm proud to announce three winners were chosen. These were Bethan McLeish, Mohammed Ebeid and Alba Vasquez Melero. You can find their abstracts within this Journal, as well as the other submissions.

Given the relatively low number of submissions received, there is also a summary of the presentations given on 10th April by members of the General and Executive Committees, together with a topical commentary of the throughput of Ambulatory Surgery in Braga, Portugal during the COVID pandemic. I hope you enjoy them all.

Mark Skues
Editor-in-Chief

Summary of the 2nd IAAS virtual Meeting: 10th April 2021

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The second International Association for Ambulatory Surgery virtual meeting took place on 10th April 2021. Convened by Drs Arnaldo Valedon and Vicente Vieira, the meeting provided an international update on the impact of COVID on Ambulatory Care, with presentations from International experts.

The President of the IAAS, Professor Doug McWhinnie, opened the meeting, highlighting that while vaccine roll-out was continuing at a variable rate internationally making individuals feel a little more secure, no-one would be safe from infection until everyone was safe. What changes would be required to optimise ambulatory care in the future? On this basis, the first speakers were John Napoli and Karen McMillan from Australia.

John highlighted that in Australia, there had been 29218 cases of COVID, with 909 deaths and 26253 recovered patients. Typically, cases were distributed in age ranges from late teens to late 60s with an additional over 85s surge. At the peak of the pandemic in July 2020, a National Partnership Agreement was made by the Australian Government for private facilities, where all elective surgery was cancelled from 1st April 2020, but to ensure financial viability, all staff wages and operating costs were covered by the Government. In return, private facilities provided additional capacity for overflow of COVID patients, provision of equipment, deployment of staff, and the possibility of becoming a quarantine facility or vaccination centre. Karen went on to inform that the longest lock down occurred in Melbourne for 112 days, and that strict screening protocols were employed for resumption of elective care namely, temperature checks, screening questions, negative tests before admission, social distancing in waiting/pre-op areas, masks worn by all, and a 20-30 min gap between operations. Non patient facing staff worked offsite, with avoidance of face-to-face meeting. Delivery drivers were not allowed to enter premises, nor were company representatives, and patients are screened the day before their procedure.

Professor Beverly Philip, the current President of the ASA, described the effects of COVID on North America. Surgical volumes dropped by 38% and 59% in March and April 2020 and are still not back to normal. Both clinicians and patients have been affected, with 25% of clinicians retiring earlier, 12% considering a career change, and an increase in anxiety, burnout, substance abuse and sadly, suicide rates. Similarly, 60% patients missed elective procedure of those who needed it. 57% feared exposure. 7% financial effect of pandemic. There was an estimated 70% fall in revenue, but financial assistance provided to healthcare from federal government. Initiatives to manage the ongoing situation include new protocols with plastic shields, sanitizers, screening protocols and visitor restrictions. New technologies are being considered, particularly 3D printed patient specific devices, devices for minimally invasive surgery, and the use of da Vinci machines for gynaecological surgery and increased use of telemedicine.

Incentives for patients include emphasising the effective safety of surgery, provided the pre-operative covid result is negative. It's estimated that patients should wait 4-12 weeks post covid, before surgery, while vaccinated patients should wait for 2 weeks after their final injection before surgery. Given the potential impact of long COVID, with up one third of patients being affected, there will be long term implications.

Mads Moxness from Norway then provided insight on the Scandinavian situation. At March 31st, out of 4664710 tested, there had been 95208 confirmed cases, with 3465 hospitalised and 673 fatalities. 650,000+ had been vaccinated. There is large local variation in Norway with large hospitals in the South East affected more than rural hospitals, where some reported no cases. The most significant issue affecting elective ambulatory surgery is the reduced workforce due to quarantine or infection, and a need for a nationwide relocation of healthcare personnel.

Consideration is given to aerosol generating procedures being a significant risk during medical procedures. Other risks include disease severity, distance from the patient, and duration of operation.

The way ahead during the pandemic was cited as early detection of infection outside the Ambulatory Surgery Centre, optimisation of existing resources by extending operating room hours, prediction of surgical volumes accurately, and to transform operational efficiency by AI based algorithms to predict case length and flexibility of the existing workforce.

Professor Zhang then provided insight from China about COVID status. Ambulatory Surgery is a growing phenomenon in a country with 34 provinces, 1 million institutions and 50.82 million procedures annually. The average length of stay is 9.1 days, and currently 12.8% of elective operations are conducted as daycase.

During the pandemic, CASA sampled 94 hospitals of 2000 offering AS and found that services were suspended in 70, partially suspended with ward closures in 4.5%. By the end of May 2020, 97% had returned to normal. Professor Zhang predicted a return to normal for Ambulatory Surgery and will continue to outgrow 2019 data by July 2020. Initiatives to manage this include the development of smart hospitals with QR code payment for services, development of telemedicine centres with online ward rounds, teleconsultation and conferences, and medical imaging.

Professor Bobbie Jean Sweitzer who is the President Elect of SAMBA, introduced a different theme, with specification of covid induced adjustments on the ambulatory pathway. Early in the pandemic, ambulatory surgery centres were asked to perform higher complexity and higher risk patients while maintaining PPE, hospital and ICU capacity to manage COVID-19 patients, and healthcare personnel.

Adjustments on the path to ambulatory surgery included management of the COVID patient, where recommendations suggest isolation for at least 10 days since onset, until patients are free of fever and symptoms are improving. What is the risk of mortality in patients undergoing surgery with SARS-CoV-2 infection? A study in the Lancet, (Lancet 2020;396:27-38) evaluated 1128 patients, 75% of which were undergoing emergency surgery found that mortality was 24%, pulmonary complications occurred in

51.2%, but mortality was 38% in this subgroup. A study from the British Journal of Surgery suggested that a wait of at least 4 weeks after notification of a positive swab test before cancer surgery reduced mortality to zero. Despite this, the possibility of longer duration post COVID symptoms exist, such as weakness, fatigue, dyspnoea, chest pain and diminished quality of life so pre-operative assessment needs to include screening for these symptoms, as suggested in a paper in Peri-operative Medicine 2021;10.1:3-4. The American Society of Anesthesiologists provided a statement suggesting a delay of 12 weeks for a patient admitted to ICU, 8-10 weeks for symptomatic diabetic, immunocompromised or hospitalised patients, 6 weeks for a symptomatic non hospitalised patients and 4 weeks for asymptomatic patients. Increasingly, prehabilitation is more important in assessing suitability for elective surgery.

Carlo Castoro, a past president of the IAAS, then went on to ask whether we need to change our paradigm for Day Surgery pathways and offered the following suggestions.

Cancellation of Surgery due to the COVID pandemic had a significant effect in Italy with an impact on surgical activity and prioritization for cancer services.

A new proposed patient pathway post COVID would suggest the following: covid antigen test 48hrs before admission, health questionnaire triage, self-isolation and social distancing, provision of patient information and optimisation of health prior to surgery. As before with patient preparation, practical arrangements on the day of surgery should be discussed, together with information on prevention guidelines, the need for social distancing and self-isolation after a negative test. Reassurance should be provided on hygiene measures and rapid in-hospital COVID-19 testing in case of need

Preparing patients with discussion of risks and benefits, agree treatment plan together with alternative options, admission discharge and follow up plans. Pre-operative assessment should aim to reduce professional interactions, with due consideration given to respiratory symptoms and other factors associated with COVID severity.

On the day of surgery, organisational changes should ensure adequate spacing between patients, staggered admissions, reduction of the number of beds in the same room, and training Day Unit staff to the “new normal”. Post discharge, a simple plan and direct

contact in case of doubts or symptoms with follow up teleconsultation should be the new norm.

Carlo then concluded that Ambulatory Surgery is the safest and best quality treatment during COVID 19, with the need to redesign the unit and the patient's journey, minimising patient-patient and patient-staff interactions, involve staff in new pathway design, and consider every component of the patient pathway to minimise the risk of infection.

Madhu Ahuja then gave a presentation about the role of telehealth in Ambulatory Surgery.

Telemedicine is defined as the delivery of healthcare services using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation and for the continuing education of healthcare providers. Telehealth refers to health care services involving all healthcare professions, rather than physicians only.

A brief current survey revealed that only 30% are using an app or web-based system to manage patients on the Ambulatory Surgery pathway. Pre-assessment is based on telephones by 60% of those surveyed; patient information provision is written or verbal by 70%; Discharge information is written by 90% and post-op follow provided by phone for 70%

Set up of a system requires development of a digital patient portal with patient registration, and in person ID check and login. From there, appointments can be carried out.

Pre-operative assessment can be conducted this way with online provision of information for the surgery.

Post op follow up is frequently conducted this way with phone call evaluation, and there is evidence of improved patient satisfaction as well as excellence of clinical outcomes.

Limitations of telehealth include reduced access to technological devices, cultural or language barriers, concerns over security, privacy and confidentiality, and the need to train staff to use the service effectively.

Implementation is a complex process, with need identification, strategic planning, investment in the digital infrastructure, training, engagement and evaluation.

The next presentation was given Jan Eshuis and Kirsti Lehtonen on the expected role of COVID-19 vaccination on Ambulatory Surgery. The international pandemic had a profound effect on healthcare in the Netherlands with a shortage of ICU beds, redeployment of anaesthetic and nursing personnel to ICU undertaking heavy shifts. This had a predictable dramatic fall in operative care, leading to an absolute backlog of 100,000 operations. Vaccination is slowly being rolled out, with 14% immunised in the Netherlands by March 30th 2021 (UK 51%). Strategies to address the backlog include planning and logistics with referral of patients from hospitals to ambulatory surgery units, increasing capacity by extending core hours of service, use of independent clinics, and education and flexible personnel management, educating unit staff to develop mixed competencies, use of lighter teams for simpler procedures, more flexible working schedules and more time in the operating room.

As with other countries, vaccination is given with prioritisation to age, healthcare personnel, and predisposing conditions to COVID 19. Preliminary results of effectiveness suggest that vaccination reduces the number of patients requiring hospital treatment by at least 74%.

Professor Corrine Vons gave us some insight into the mechanisms proposed for managing the backlog of procedures caused by the pandemic. She reported that in France, there were 500,000 fewer stays for ambulatory surgery, meaning an 80% decrease in Ambulatory Surgery. UK media sources have quoted a likely 10 million waiting list as a consequence of the pandemic. Some models for resumption include a study evaluating carotid endarterectomy, where, with a background capacity of 74 patients per week undergoing operations, surgical capacity equals demand, and waiting lists would remain constant. Even if surgical capacity is doubled after 1 month of resuming services, it will still take 6 months to clear the waiting list backlog; 11.5% will wait more than 12 weeks for surgery, resulting in 100-350 additional strokes.

In Ontario, Canada, the estimated backlog was 148364 operations, with an estimated clearance time of 21 months. A depressing study from the USA evaluating cardiac surgery suggested that waiting lists will never return to normal. A proposed strategy is an increasing need to employ ambulatory surgery as a transitional

solution with the use of available retired medical professionals to allow additional operating shifts, expand capacity of ASCs and increase the procedures sent to ambulatory care.

The penultimate talk was given by Eric Litonius, an Anaesthesiologist from Finland and was titled, 'Post discharge monitoring for AS patients and benchmarking of outcomes'

He opened his talk by enquiring what to measure and why? The answer was to choose data that is easy to collect; accurate results should be simple to interpret, actionable and aligned to goals. It is more effective to benchmark to peers to set reasonable goals. Caution should be applied to efficiency measurement as increased efficiency can have a negative effect on patient satisfaction and safety.

Post discharge monitoring has three time context stages: 1) vital reflexes (minutes); 2) Discharge (hours); 3) Full recovery (days/weeks/months). Between 2) & 3) are such complications as haemorrhage, pain, nausea and vomiting, delirium, and neuropathy. So give written clear instruction 24 hour coverage. How to contact hospital. Records should be available. 24 hour follow up phone call.

Finally, he spoke about Covid after surgery.. should I worry?

Mentioning the recent study in the Lancet, (*Lancet* 2020;396:27-38) there is high mortality within 30 days of undergoing surgery, but a more recent study evaluating upper extremity surgery in 1093 patients (*BMJ Quality and Safety* 2021 30.4:283-91.) during the first wave of the pandemic revealed 19 covid cases, and 1 death due to pneumonia within the study period. He therefore suggested close follow up and considering higher dose thromboprophylaxis when feasible.

The final presentation was made by Professor Girish Joshi who spoke on, "High Risk Patient Selection for Ambulatory Surgery: Time to Cross Boundaries."

In the United States, 65% surgical procedures are on an outpatient basis. Implementation of the Enhanced Recovery programme has facilitated migration to Day Surgery, with lower cost and improved outcomes. Selection of appropriate patients is complex and dependent on type of surgical procedure, patient characteristics, proposed anaesthetic, type of facility and care giver availability.

Suitable procedures should have low risk for blood loss, pain at discharge should be controlled with oral medications, there should be no need for prolonged post-operative care, duration should be less than 6hrs, and surgical expertise should exist for the procedure.

Patient characteristics: Age alone is a poor marker for suitability. It is better to consider post-discharge issues such as increased need for supervision and frailty associated with increased morbidity.

Specific co-morbidities that are associated with increased risk are patients within 30 days of a myocardial infarction transient ischaemic attack or stroke, coronary artery ischaemia with stent insertion, severe valve dysfunction, severely reduced ejection fraction (<35%), and end stage renal disease not undergoing dialysis. Obesity: Increased Body Mass Index alone does not influence thirty day readmission rates, but rather co-morbidities associated with obesity and obstructive sleep apnoea, which should be screened with STOPBANG testing and a cut off of 5 used. Other cardiac indicators include new onset atrial fibrillation, the presence of stents, and implantable cardioverters / defibrillators. For the latter, if patients are pacemaker dependent, the device should be reprogrammed. If not, a magnet could be used. The use of bipolar diathermy should be minimised, with the grounding plate placed near the surgical site and away from the device. Patients who have stents inserted should wait 30 days for bare metal stents, 6 months for drug eluting stents, and 12 months for anything older.

Other conditions mentioned were chronic obstructive pulmonary disease where active infection should be treated, smoking stopped and bronchodilator regimens optimised; diabetes where antidiabetic drugs should be continued to the day of surgery, with early resumption of oral intake; end stage renal disease where comorbidities should be optimised, and anaemia and asymptomatic hyperkalaemia should be tolerated and TIA/stroke: Wait 30 days.

There are now consensus guidelines for management of the malignant hyperpyrexia susceptible patient from the European MH group published this year (*British Journal of Anaesthesia* 2021;126.1:120-30). Finally, some work was published evaluating the incidence prediction and causes of unplanned 30 day hospital admission after ambulatory procedures (Teja B et al *Anesthesia & Analgesia* 2020;131:497-507.) where a scoring system offered good discrimination in determination of the risk of unplanned admission.

Professor Joshi concluded with the thought of developing procedure specific clinical pathways to determine the suitability for outpatient procedures.

At the conclusion of the meeting, Dr Valedon thanked the speakers for their informative presentations and looked forward to the next meeting (hopefully in person) in Bruges in 2022.

2nd virtual meeting of the International Association for Ambulatory Surgery: Submitted Abstracts

Preoperative Fasting Audit

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Background

The aim of preoperative fasting is to decrease the risk of pulmonary aspiration during induction of general anaesthesia. However fasting hours beyond the standard limits is

Not preferable. This Audit was undertaken to assess the actual number of fasting hours prior to elective lists associated adverse effects and adherence to the trust preoperative fasting guidelines.

Aim

To assess the compliance with the trust preoperative fasting guidelines.

Method

Data was collected anonymously from adult patients having elective surgery on the day of the surgery, either before or after the operation. Lists included General surgery, Obstetrics, Gynaecology, Urology, Max-fax, ENT, Orthopaedics, and one CTS case. We then compiled the Data onto an Excel spreadsheet and interpreted appropriately against the trust standards.

Results

Total of 51 patients aged between 20 to 87 were interviewed. On average, fasting time was around 12 and seven hours for food and fluids respectively. Most of them were not offered hot drink whereas 78% received sips of water. Only 3 out of the 51 had thirsty sensation, 6 had headache, and 4 complained of nausea. 92% said they had good overall experience.

Conclusion

Most of the patients had fasting time more than that recommended in the trust

Guidelines. Fasting times were sometimes prolonged depending on the patient's rank on the operation list. 22% of the patients did not receive fluids or sips of water prior to their operation. Adverse effects were more obvious in patients with prolonged fluid fasting time.

Pandemic and Ambulatory Surgery in Alava (Spain)

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The objectives of this study are to assess the impact of the pandemic in our surgical activity in major outpatient surgery" comparing it with the activity with admission as well as analyze the multiple factors that have influenced on it.

Methods

We have carried out a review of the data on surgical outpatient and inpatient activity of our service during 2020, comparing these data with those of 2019.

Results

In 2019 3,976 patients were operated on a scheduled basis in our department.

Due to the pandemic situation in 2020 the total dropped to 3,154" which meant a decrease in activity by 20.7%.

If we only focus on the AS activity, there was a decreased in the number of patients in 2020 compared to 2019 by 13.4%" although the percentage of AS regarding the total number of surgeries increased by 4.6%.

An explanation for these data is found in what happened in our Health area during 2020. At the beginning of the pandemic, the oncological and non-delayed surgery displaced the AS activity. Once the first wave was overcome, all surgical activity has been recovered and even surpassed the 2019 data.

Conclusions

Ambulatory surgery was penalized in our organization at the beginning of the pandemic by prioritizing other oncological and non-delayed surgeries. The AS has been fundamental in the recovery of surgical activity in subsequent months of the pandemic; which leads us to conclude that the AS is possible and necessary in times of pandemic.

Improving the Quality of Pre-Operative Assessment for patients undergoing General Anaesthesia for Ophthalmic Surgery

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Background

Patients listed for day case ophthalmic surgery under general anaesthetic at the Wolverhampton Eye Infirmary, United Kingdom, undergo a pre-operative assessment conducted by Foundation doctors with limited experience.

The quality of pre-operative assessment was poor and a high number of same day cancellations were observed for issues that could have been detected in pre-operative assessment.

Methods

This was a five-cycle quality improvement project conducted according to Plan Do Study Act methodology. The quality of individual pre-operative assessments was retrospectively measured according to 23 essential criteria during each data collection cycle. Quality of assessment was measured before and after four separate interventions, which included educational interventions and introduction of a pro forma to guide pre-operative assessments.

Results

45 patient assessments were analysed. Assessment of cardiorespiratory symptoms improved from 40% of patients in the first cycle to 100% by the fifth cycle. Assessment of exercise tolerance improved from 50% in the first cycle of patients to 100% by the fifth cycle. Airway assessment improved from 0% of patients in the first cycle to 100% by the fifth cycle. Overall, only 7 of the 23 essential criteria were met in all patients during the first cycle, which improved to 16 of the 23 essential criteria being met in all patients during the fifth cycle.

Conclusions

The introduction of a pro forma for pre-operative assessment has been shown to improve the quality and safety of pre-operative assessment for Ophthalmic surgery.

The Safety of Non Catheter in Laparo-endoscopic Single Port Day Surgery in Gynecology under Enhanced Recovery Mode: An Analysis of 88 Cases

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Background and Objective

Day surgery is the trend of medical development, indwelling catheterization is the traditional concept of general anesthesia, However, as an invasive procedure, the placement of urinary catheter may damage the urethra and bladder mucosa, which will increase

the probability of surgical related urinary tract irritation and urinary tract infection. The purpose of this study was to investigate the safety and feasibility of non catheter in laparoendoscopic single port day surgery in gynecology under enhanced recovery mode.

Feasible and safety of ovarian surgeries by V-NOTES in Day surgery center

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Objective

To investigate the feasibility and safety of transvaginal laparoscopic (V-NOTES) ovarian surgery in day surgery center.

Methods

From May 2020 to February 2020, 50 cases of ovarian cystectomy by V-NOTES were performed in the gynecological day surgery center of Chengdu Women and Children Center Hospital. The age of the patient was (29.31 ± 9.65) years. Including 28 cases of Teratoma, 11 cases of endometriosis and 11 cases of other benign ovarian tumors. The patient was admitted on or before the day of surgery and discharged within 24 hours after surgery.

Results

All patients were operated smoothly, bleeding was 15.02 ± 4.86 ml, no organ injury, no transperitoneal laparoscopy, no postoperative complications such as infection, no Hematoma, no fever, all patients were discharged within 24 hours, and all patients were discharged within 24 hours, no transfer to the general ward, no case of readmission after discharge. Patient and family satisfaction 98%.

Conclusion

Transvaginal laparoscopic (V-NOTES) ovarian surgery is feasible, safe and has significant social and economic benefits.

Clinical Analysis of 128 Cases of Non-indwelling Catheterization after Daytime Single-port Laparoscopic Surgery in Gynecology Based on the Surgical Concept of Enhanced Recovery After Surgery (ERAS)

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Objective

To investigate the feasibility and safety of non-indwelling catheterization after daytime single-port laparoscopic surgery in gynecology under the surgical concept of enhanced recovery after surgery (ERAS).

Methods

A total of 128 cases of gynaecological single-port laparoscopic day surgery were collected from May 2020 to December 2020 in the day surgery centre of our hospital. All the patients underwent general anaesthesia. Postoperative pain score, anal exhaust time, first time of getting out of bed and first time of defecation were summarized and analysed.

Results

The postoperative pain score was (2.23 ± 0.99) one hour after operation. The score at 3 hours after operation was (1.77 ± 0.88) . The score at 6 hours after operation was (1.57 ± 0.88) . The score at 12 hours after surgery was (1.43 ± 0.80) , the time to anal exhaust was (11.23 ± 9.14) hours, the time to get out of bed for the first time was (3.38 ± 1.23) hours, and the average time to urinate for the first time was (1.56 ± 1.06) hours. All patients were discharged on the same day

and the day after surgery. No complications occurred or readmission occurred, and all patients recovered well.

Conclusion

Under the surgical concept of rapid recovery (ERAS) for benign gynaecological diseases, it is feasible, safe and effective to do not indwelling catheterization after single-port laparoscopic surgery in the daytime. The implementation of the ERAS concept and the absence of indwelling catheter can ensure the early movement of patients out of bed, promote patient comfort, reduce postoperative complications, accelerate patient recovery, ensure patient safety, and improve patient satisfaction.

The Safety of Non-catheter in Laparo-endoscopic Single Port Hysterectomy Day Surgery in Gynecology Under ERAS Mode

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Objective

To investigate the safety and feasibility of non catheter in laparo-endoscopic single port hysterectomy day surgery in gynecology under ERAS mode

Materials and Methods

Data of 8 cases of hysterectomy by laparo-endoscopic single site day surgery between October 2020 to March 2021 in the department of day surgery ward of our hospital were collected. The patients urinated within 10 minutes before operation, and no catheter was placed during the operation. The operative method, operative time, intraoperative input and blood loss, the first time to urinate, exhaust and get out of bed, the incidence of postoperative urinary retention, the incidence of surgical complications and transfer to the general ward, satisfaction and so on.

Results

Among the 8 patients, there were 3 cases of atypical endometrial hyperplasia, 3 cases of multiple myoma and 2 cases of adenomyosis. Age was from 43 to 52 years old, body mass index was from 20 to 27 kg/m², operative time was from 115 to 168min, intraoperative blood loss was from 20 to 80 ml, intraoperative input was from 1100 to 1600 ml; First time of getting out of bed after surgery was from 1.8 to 5.5 h, feeding time was from 1.5h to 6h, urination time was from 1h to 5h, and exhaust time was from 2.5h to 16h; 7 patients had symptoms of urinary tract irritation without urinary retention. No transfer to porous, open surgery, no transfer to the common ward, no bladder, ureter injury, no hematoma, infection, secondary operation, the satisfaction is 100%.

Laparoscopic Cholecystectomy in the Elderly –Retrospective Study

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Introduction

Life expectancy is in a continuous expansion and there is an increased demand for surgery by older patients, namely laparoscopic cholecystectomy (LapC). we intend to compare LapC in ambulatory surgery (AS) with elective surgery (ES) in elderly patients.

Methods

Retrospective study of elderly (>75 years) submitted to LapC in AS and ES between 2015 and 2019. Statistical analysis was performed with IBM-SPSS®, p-value<0.05.

Results

106 patients were included, with a mean age of 79 years, 69% female and 44% ASA III. 48% were operated in AS.

Comparing LapC in AS and ES, there were more female patients (76% vs 62%, p<0.05), less surgical time (44 vs 61 minutes, p<0.05) and less major postoperative complications in AS (2% vs 7%,

p<0.05). There was no difference between: age, ASA, intraoperative complications and minor postoperative complications. Mortality rate was 0%.

Four AS patients (6%) were converted to ES. In ES, mean postoperative hospitalization was 2 days, with 45% discharged on the first postoperative day and only one patient presented a minor complication.

Regarding postoperative complications there was no difference in age and gender. Major complications were more frequent in ASA III patients (ASA II 19% vs ASA III 38%, p<0.05).

Discussion

This study demonstrates that LapC in AS appears to be safe in the elderly, with no differences in intraoperative complications and a lower rate of major complications, which were associated with ASA III. Almost half of ES patients were discharged on the first postoperative day, similarly to the patients in AS.

Post-thyroidectomy Hypocalcaemia: A Single Center Experience

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Post-thyroidectomy hypocalcaemia is a common complication and results in significant morbidity. Our aim is to describe the incidence and risk factors for hypocalcaemia after completion or total thyroidectomy.

Between January 1 and August 31, 2019, a total of 205 patients underwent completion or total thyroidectomy in our Center.

Serum calcium and parathyroid hormone (PTH) levels were measured on day 1 postoperatively. Hypocalcaemia was defined as mild if serum calcium level was between 8.0 and 8.4 mg/dL and severe if serum calcium level was less than 8.0 mg/dL. Post-

operative hypocalcaemia can be transient (lasting less than 12 months) or permanent (if patients had not recovered within 1 year).

Mild and severe hypocalcaemia occurred in 51 (24,5%) and 41 (20%) patients, respectively. Of the 113 normocalcaemic patients, 2 developed hypocalcaemia (one of them mild and the other severe) despite normal serum calcium levels in the morning of the first postoperative day. Permanent hypocalcaemia was observed in 2 (1%) patients.

Outpatient Laser Treatment of Pilonidal Disease

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Pilonidal disease is an acquired chronic inflammation of the hair follicles of the sacrococcygeal skin and subcutaneous fat which mainly affects young Caucasian males. This condition is associated with significant morbidity and socioeconomic implications.

Laser treatment of pilonidal disease is a percutaneous approach with minimal damage to proximal tissues and has been associated with low rates of postoperative complications and satisfactory cosmetic outcome.

The present paper aims to examine the outcomes of the patients undergoing laser treatment in the Integrated Center of Ambulatory Surgery of the Hospital and University Center of Porto between 2019 and 2020 on an outpatient basis. In a total of

44 patients the following aspects will be overviewed: wound healing time, early post-operative complications, time to re-establish both daily life and professional activity and early recurrence rate.

Quality of the Pre-operative Assessment for Day Case Patients attending the Oral Surgery Department for Treatment with Intra-Venous Sedation

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Introduction

Intra Venous Sedation (IVS) is a helpful pharmacological adjunct in treating day-case Oral-Surgery patients. Patient pre-assessment helps identify suitable individuals and minimise peri and post-operative risks.

This two cycle audit aimed to review and improve quality of IVS pre-assessment within a secondary care Oral and Maxillofacial department.

Method

Retrospective review of pre-operative assessments for patients receiving IVS. Data included: Medical History, Blood Pressure, ASA grade and BMI/Weight (considered essential). Six additional desirable features such as social history and whether the patient received written information were recorded.

Both cycles reviewed patients seen within a six month period (1) 2017/2018 and (2) 2019/2020.

Results

Of 40 patients in cycle (1), 25% recorded essential criteria. Five patients did not receive treatment for reasons including opting for General Anaesthetic and cannabis use, with a loss of over five clinical hours. 28% of patients received written information in (1) compared to 80% in (2). Cycle (2) comprised 50 patients; 46% recording essential criteria. Seven patients did not have sedation for reasons including no child care and breastfeeding, with six opting for local anaesthetic only. one hour of clinical time lost. For (1), 68% of patients were consented pre-operatively, compared to 86% in (2).

Conclusion

For (1), 'booking forms' had not been retained, meaning essential information was lost and sedationists unable to utilise data pre-operatively. Following (1), team education resulted in booking-form retention and improved pre-operative assessment, leading to more efficient/effective IVS lists with optimum patient safety and reduced disruption. There is still scope for improvement and further audit is required.

Did Ambulatory Surgical Units succeed in adapting to COVID-19 pandemic?

The experience of a Portuguese Hospital with Ambulatory Surgery

A.R.Aranes,V.Vieira

Abstract

COVID-19 led to a break in the standard of medical practice. During the first outbreak, many Ambulatory Surgical Units (ASU) were adapted to the management of COVID-19 patients, as happened at Hospital de Braga. This article presents a descriptive analysis of ambulatory surgical activity at our ASU in 2019 and 2020. Although the total number of

procedures decreased, we achieved an increase in both ambulatory (72,6%) and day-case achievable procedures (51,8%) rates and Case-Mix Index (0,79), without compromising ambulatory surgery outcomes and quality indicators. At our ASU, the pandemic created the opportunity to improve the standard practice.

Keywords: Ambulatory Surgery, COVID-19, Quality Indicators.

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Introduction

In 2020, the Coronavirus disease 2019 (COVID-19) pandemic brought great changes to health care services management. Facing an inadequate capacity for the sudden surge of patients infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), many institutions had to proceed to a reorganization of standard practice (1-3). In many hospitals this response meant a restriction in all surgical specialties to priority cases. This measure enabled reallocation of health-care staff to COVID-19 units, limited unnecessary patient and staff exposure and prevented supply or personal protective equipment shortages (1,2).

In the early stages of the outbreak, many Ambulatory Surgical Units (ASU) were closed, postponing scheduled elective surgeries. At Hospital de Braga (HB), as in many Portuguese and worldwide ambulatory care facilities, the ASU shares operating and recovery rooms with the Central Operating Theatre and its activity was fully suspended during the first nationwide lockdown, from the 14th of March to the 8th of May 2020. For almost 2 months, only urgent and high priority surgical procedures were performed in our hospital. Waiting lists for moderate and low priority procedures kept growing continuously and, as in many other countries, public opinion pressure was turned towards the delayed health care of non-COVID patients (2,4).

Facing this scenario, institutions were advised to shift inpatient surgery to ambulatory settings, when feasible (4,5). The Portuguese "Guidelines for Resuming Surgical Activity in the COVID-19 Era" pointed that "The Ambulatory Surgery area should have preference in resumption of surgical activity and should be encouraged in this resumption of activity, maintaining its assumptions of operation: safety and quality in the anaesthetic and surgical care of our users" (5). Although, ambulatory surgery is pointed out to be safer for patients as the risk for nosocomial infection is reduced by a shorter length of stay in the hospital facilities (6,7), our Hospital Management Team encouraged every surgical speciality to expand the model of ambulatory surgery to more complex Day Case Achievable Procedures (DCAP). Simultaneously,

anaesthesiologists faced the challenge of patients with more complex and unstable medical conditions in the ambulatory settings and the challenge of DCAP feasibility.

This article aims at comparing the effects of the COVID-19 pandemic on several Quality Indicators (regularly used to monitor surgical activity in ASUs) in 2019 and 2020, showing how the aforementioned strategies influenced clinical and efficiency outcomes that can lead to AS development by having more complex patients and procedures eligible for this surgical regimen.

Methods

This is a retrospective single-centre descriptive analysis that aims to evaluate and compare several quality and efficiency indicators of the ambulatory surgical activity between the civil years of 2019 and 2020. Data was provided by the Planning and Efficiency Department of HB.

The ASU activity is described regarding several quality indicators used at HB to monitor the ambulatory surgical activity. The primary outcomes are Ambulatory Rate (AR), Day-case achievable procedures (DCAP) rate and Case-Mix Index (CMI).

AR represents the number of ambulatory procedures over the total number of non-urgent elective surgeries. Rates are presented as global surgical activity AR and individualized for each surgical specialty as well.

DCAP are defined as procedures predictably executed in less than 24h, though not universally performed in the ambulatory set. The DCAP rate represents the number of DCAP performed in the ambulatory setting over the total number of DCAP performed at HB.

CMI is an index that correlates with severity of patients' health status and results from the ratio between the number of equivalent patients weighted by the relative weights of the respective diagnosis related groups (DRG) and the total number of equivalent patients.

It is calculated for each civil year, being commonly used in our ASU as an indicator of patients' complexity and stability of comorbidities.

We considered secondary outcomes: (1) unexpected admission rate, representing the number of unpredicted inpatient hospitalization from the ASU; (2) readmission rate, representing the number of patients operated at the ASU that were admitted to the institution in the first 48h after discharge; (3) same-day surgery cancellation rate, representing the number of surgeries cancelled in the same day of surgery; (4) reintervention rate, representing the number of ambulatory patients who underwent reintervention, in the first 48h, as ambulatory patient, and the first 30 days, as inpatient surgery; (5) overnight-stay rate, representing the number of patients that spent the first night after surgery at the ASU but still were discharged before completing 24h after admission.

Descriptive statistics of the results obtained is presented. Categorical variables are expressed as frequencies (n) and percentages (%).

Results

Compared with 2019, in 2020 we verified a decrease in both overall elective non-urgent surgical activity (from 28080 to 25414 procedures – 9.2% fall) and in ambulatory surgical activity, although at a minor extent (from 19270 to 18461 procedures – 4.2% fall) (Table 1). Although the number of ambulatory and global surgical procedures decreased, the AR showed an increase of 4% (from 68.6% to 72.6%) in 2021, overcoming the annual mean growth rate of less than 2% that had been observed at our institution since 2011 (Figure 1).

The distribution of ambulatory activity according to specialty is

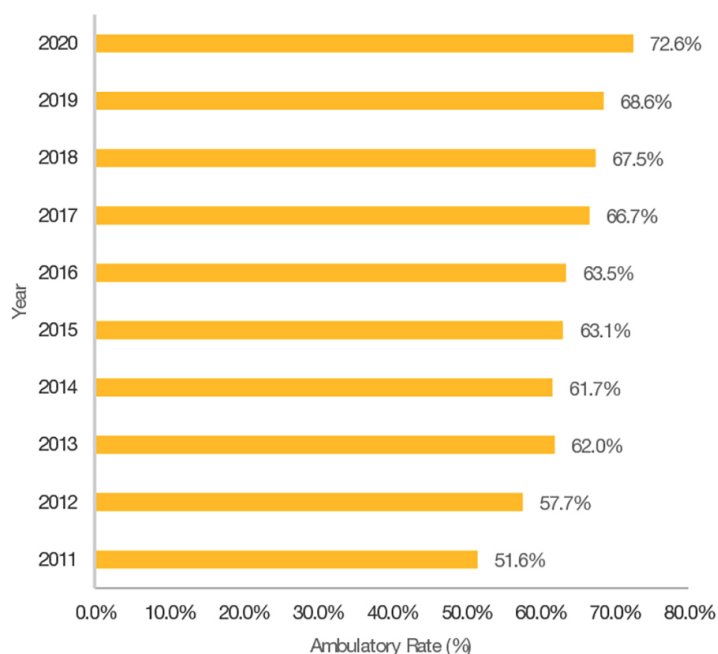


Figure 1 Ambulatory rate evolution at Hospital de Braga's Ambulatory Surgical Unit since 2011.

presented in Figure 2, which points ophthalmic procedures as the most frequent at the ambulatory setting, representing 60.1% (n=11103), in 2020, and 62.4% (n=12034), in 2019. At the same time, we verified that some specialties tended to increase their AR as was the case of Vascular Surgery, General Surgery and Paediatric Surgery that recorded the biggest increase in AR, with an increase of 18.2%, 15.6%, and 11.1%, respectively. Maxillofacial surgery showed a decrease of 4.6%, but that can be explained by the usual low number of surgical procedures performed at our hospital (Figure 3).

Table 1 Comparison of 2019 and 2020 ambulatory surgery primary and secondary outcomes.

Year	2019	2020
Surgical Activity (n)		
Elective surgery	28080	25414
Ambulatory surgery	19270	18461
Primary Outcomes (%)		
Ambulatory rate	68,6%	72.6%
DCAP rate	14.3%	51.8%
CMI	0.76	0.79
Secondary Outcomes (% (n))		
Same-day surgery cancellation rate	9.3% (n = 1967)	4.5% (n = 861)
Unexpected admission rate	1.4% (n = 279)	1.1% (n = 201)
Overnight stay rate	3.4% (n = 659)	3.6% (n = 663)
Readmission rate	0.03% (n = 5)	0,01% (n = 1)
Reintervention rate (Ambulatory surgery at 48h)	0.01% (n = 1)	0.01% (n = 2)

DCAP - day-case achievable procedure CMI - Case-Mix Index

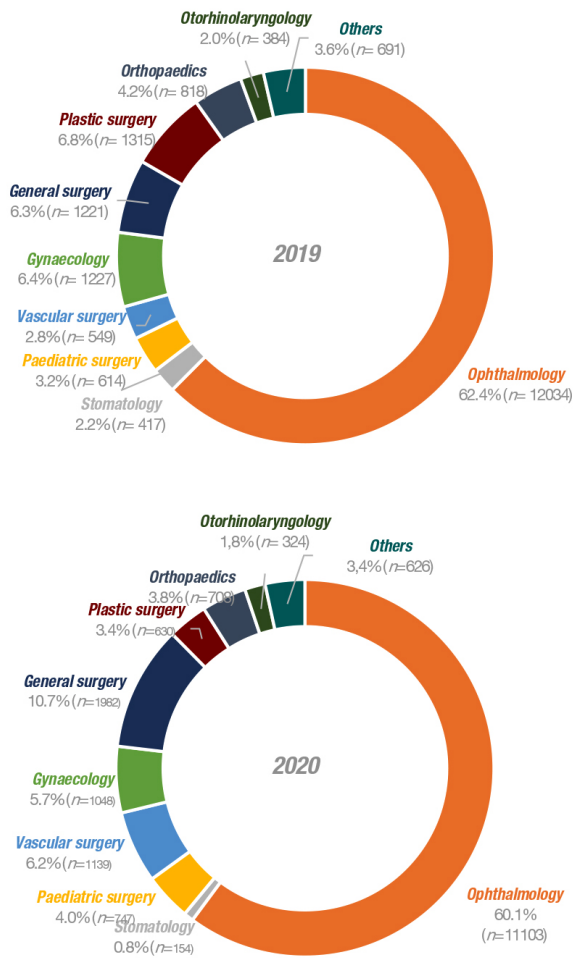


Figure 2 Ambulatory surgical production distributed by specialty.

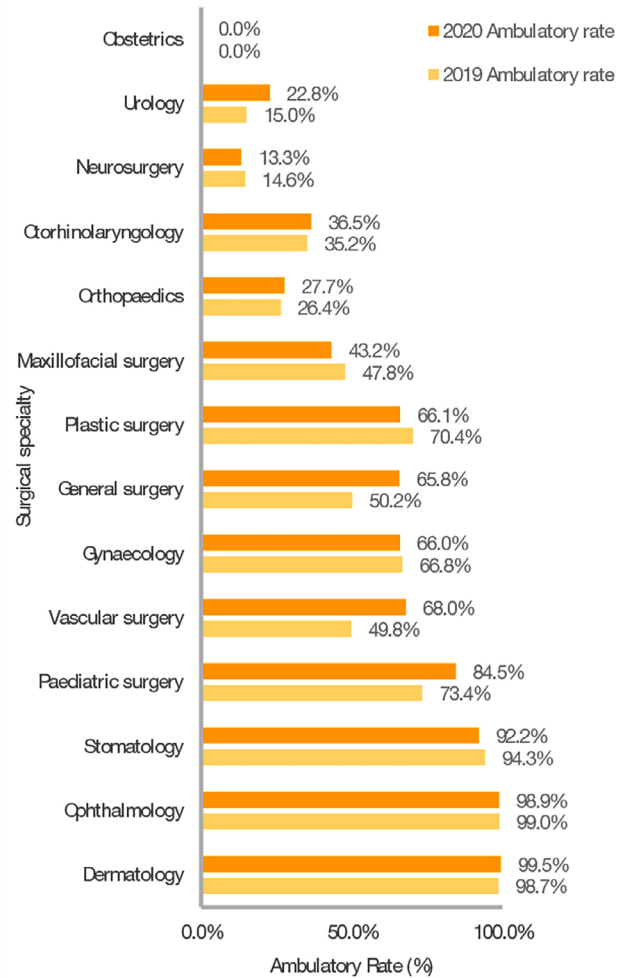


Figure 3 Ambulatory rate distributed by specialty.

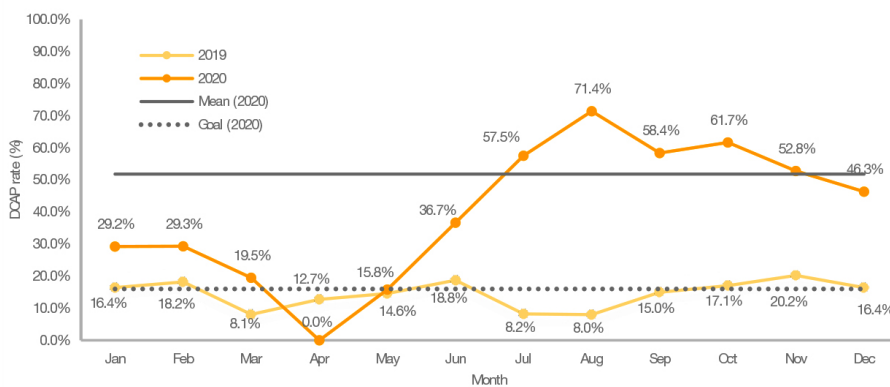


Figure 4 Day-case achievable procedures (DCAP) rate in 2019 and 2020, distributed by month.

Concerning DCAP rate, represented in Figure 4, January 2020 started with a rate of 29.2% then abruptly declined to 0%, in April, as the unit closed, and our infrastructure used as a COVID Operating theatre. The ASU reopened in late May with a 15.8% rate of DCAP, that progressively peaked to 71.4% in August 2020, after which, the performance of DCAP slowed down to 46.3% in December 2020. Globally, in 2020, we achieved a DCAP rate of 51.8% exceeding the National Goal of 16%, expected from our institution, and the value of 14.3% in 2019. As reported in Table 2, the most relevant DCAP contributing to these results in 2020 were laparoscopic cholecystectomy (DCAP rate of 75.5%) and hemithyroidectomy (DCAP rate of 50.0%).

CMI also points towards an increase of complexity of the patients included in the ambulatory pathway, with an increase of 0.76 (2019) to 0.79 (2020).

Regarding the secondary outcomes of ambulatory surgery, in 2020 there was general positive evolution of several quality indicators. There was a decrease in the rates of unexpected admission (1.4% to 1.1% rate) and same-day surgery cancellation rate (9.3% to 4.5% rate), compared to the previous year. The need for readmission (<0.1% rate) and ambulatory reintervention in the first 48h for ambulatory (<0.1% rate) were maintained stable. The only quality indicators with a negative evolution were overnight-stay rate, with a mild increase of 0.2% (from 3.4%, in 2019, to 3.6%, in 2020) and inpatient reintervention in the first 30 days, with a minor increase of 0.02% (x patients) from 0.14% to 0.16% (Table 1).

Discussion

The COVID-19 pandemic led to a sudden disruption in the standard practice of medicine, implicating changes in the priorities of the

Table 2 Day-case achievable procedures at Hospital de Braga.

DCAP	AMBULATORY PROCEDURES (n)	TOTAL NUMBER OF PROCEDURES (n)	DCAP RATE (%)
Laparoscopic cholecystectomy	446	591	75.5%
Hemithyroidectomy	27	54	50.0%
Abdominoplasty	3	20	15.0%
Bilateral reduction mammoplasty	5	23	21.7%
Cruciate knee ligaments repair	1	12	8.3%
Cystocele and rectocele repair	3	81	3.7%
Transurethral prostatectomy	1	38	2.6%
Spinal discectomy	4	174	2.3%
Laparoscopic anti reflux surgery	0	5	0.0%
Mastectomy	0	57	0.0%

Portuguese Health Care System, namely by closing of Operating Theatres, delaying surgeries and postponing some of the high priority surgical interventions. Staff were mobilized and some ASUs (ours included) were completely adapted to the treatment of COVID patients. At HB, after the mid-March COVID-19 pandemic outbreak, surgical care was restricted to urgent and high priority surgery, leading to the closure of our ASU for 8 weeks from the 14th of March to the 8th of May. During this period, our facilities were adapted to the surgical management of SARS-CoV-2 suspected or positive patients. When the unit reopened, though restrictions in activity were in place to ensure patient and staff safety, we found an improvement in the rates of our ambulatory surgical activity, as outlined by our “Guidelines for Resuming Surgical Activity in the COVID-19 Era”. So, despite a decrease in the absolute number of global and ambulatory surgical procedures at our institution, we noticed an increase in both AR and DCAP rates and CMI, without compromising the ambulatory surgery outcomes and quality indicators monitored at the institution.

The working model for ambulatory surgery, at Hospital de Braga, allowed an efficient response to the increasing waiting list observed during the first nationwide lockdown. Although there were restrictions in the patient management, we achieved an AR of 72,6%, which is superior to the AR recorded in the year of 2019 at our ASU and the 64,9% rate registered in Portugal, during 2020 (8). The increase in AR allied to a great increase in the rate of DCAP, reflects a tendency to expand the scope of procedures performed in the ambulatory setting. Laparoscopic cholecystectomy and hemithyroidectomy are the most significant. The DCAP rate for these surgeries stands above the Portuguese national rate, as we achieved DCAP rates of 75,5% for laparoscopic cholecystectomy and 50,0% for hemithyroidectomy, given the national rate of 36,1% and 23,5%, respectively (8,9). Also, the increase of CMI in 2020 reveals a tendency to expand the medical complexity of patients included in our ambulatory surgery protocols (10).

The increase in ambulatory procedure complexity was achieved at the expense of a slight increase in overnight-stay rate from 3,4% to 3,6%, in 2020, even though Portuguese guidelines for resuming surgical activity after COVID-19 outbreak advised its eviction (5). Nevertheless, the rates of unexpected admission and same-day surgery cancellation have decreased, whereas the need for readmission and ambulatory reintervention was maintained at low

rates, revealing adequate preoperative patient screening and day-case management.

Facing the new standards, not compromising our patients and workforce’s security during a pandemic outbreak was one of the many challenges. The preoperative assessment included testing all patients, except for those with healing criteria, for SARS-CoV-2 with an Rt-PCR test in the previous 48-72h, as stated by the Direção Geral de Saúde Portuguesa (Portuguese General Health Directorate) and advised by the international community (4,11,12). Also, as recommended by the Portuguese “Guidelines for Resuming Surgical Activity in the COVID-19 Era”, all patients were provided with an individual surgical facemask before entering the hospital, assessed for COVID-19 risk contacts or symptoms before being admitted to ASU and the ambulatory circuits were reviewed to ensure a security distance between patients (5). However, patients’ SARS-CoV-2 infection after surgery was not routinely evaluated at our Unit and did not figure as an endpoint of this study.

This single-centre descriptive analysis has several limitations. First, it would be important to evaluate and compare the overall patient’s satisfaction after ambulatory surgery while increasing the complexity of procedures and patients. To confirm the increase in patient’s complexity, ASA physical status should have been evaluated and compared, but the records provided were insufficient.

Conclusion

The results reported show that ambulatory surgery may promote the sustainability of Healthcare Systems that face the need to design an effective response to the COVID-19 pandemic. At HB, the ASU closed during the first nationwide lockdown and its facilities were adapted to the surgical management of SARS-CoV-2 suspected or confirmed patients. The unit reopened in May and readapted its standard practices to the new paradigm. Although we verified a global decrease in surgical activity, we achieved an increase in AR and DCAP rate, which reveals that ambulatory surgery provided a solution to bypass the scarcity of ward beds for inpatient surgical care. We conclude that ambulatory surgery is a powerful tool to grant resilience and agility to a health care system dealing with such challenging scenarios.

In our experience we can say that the COVID-19 pandemic came as an opportunity to cross some boundaries and offer the benefits of ambulatory surgery to more patients and, at the same time, helping our National Health System avoid the unacceptable growth of surgical waiting lists.

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