Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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ORIGINAL ARTICLE

The impact of COVID-19 pandemic on reconstructive urologic surgery and andrology Spanish units' practice during the state of alarm in 2020: National survey

P. Calleja Hermosa[a], F. Campos-Juanatey[a], R. García-Baquero[b,*], J. Ponce de Leon Roca[c], J.I. Martínez-Salamanca[d]

[a] *Unidad de Urología Reconstructiva y Andrología, Servicio de Urología, Hospital Universitario Marqués de Valdecilla, Instituto de Investigación Valdecilla (IDIVAL), Santander, Cantabria, Spain*
[b] *Unidad de Andrología y Cirugía Reconstructiva Urogenital, Servicio de Urología, Hospital Universitario Puerta del Mar, Cádiz, Spain*
[c] *Unidad Urología Reconstructiva de Fundació Puigvert, Coordinador nacional del Grupo de Cirugía Reconstructiva Urológica de la Asociación Española de Urología, Barcelona, Spain*
[d] *Servicio de Urología, Hospital Puerta de Hierro, Lyx Instituto de Urología, Universidad Francisco de Vitoria, Coordinador Nacional del Grupo de Andrología de la Asociación Española de Urología, Madrid, Spain*

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KEYWORDS
COVID-19;
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Abstract
Introduction: In Spain the state of alarm secondary to COVID-19 dramatically changed the medical and surgical assistance activity of other pathologies. Regarding urological pathologies, those considered as ''non-urgent'' (andrology and reconstructive surgery) were postponed or even unattended.
Material and methods: In May 2020, once the first COVID-19 wave was almost over and still in the state of alarm, a 24-item survey was sent to 120 urologists from the Andrology Group and the Urologic Reconstructive Surgery Group of the Spanish Urological Association (AEU). Its aim was to determine the impact on clinical and surgical practice in both subspecialties.
Results: We observed a response rate of 75.8% with 91 answered surveys. Before the state of alarm, 49.5% of urologists had 1–2 weekly surgical sessions available, surgical waiting list was 3–12 months for the 71.4%, and 39.6% attended between 20–40 patients weekly in office. During the state of alarm, 95.6% were given any kind of surgical guidelines, prioritizing emergency and oncologic pathologies. In the 85.7% of the hospitals neither andrology nor reconstructive surgeries were performed. In office, around 50% of patients were attended not on-site, most of them through telemedicine (phone calls and e-mails).

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* Corresponding author.
E-mail address: rgbaquero@hotmail.com (R. García-Baquero).

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Conclusions: The negative pandemic implications in relation to the andrology and reconstructive surgery pathologies were truly important. After almost 2 years from the start of the pandemic, the true final impact on our health system has yet to be determined.

PALABRAS CLAVE
COVID-19;
Andrología;
Cirugía reconstructiva;
Encuesta nacional

Impacto de la pandemia en la actividad de las unidades de cirugía reconstructiva urológica y de andrología en España durante el estado de alarma (COVID-19) en 2020: resultados de una encuesta nacional

Resumen

Introducción: El estado de alarma debido a la COVID-19 revolucionó la actividad asistencial y quirúrgica. Dentro de la enfermedad urológica, aquellas consideradas «demorables» como la andrológica y la reconstructiva sufrieron un retraso considerable en su atención.

Material y métodos: En mayo de 2020, tras haber superado casi la primera ola de la pandemia y en pleno estado de alarma, se envió una encuesta con 24 ítems a 120 urólogos integrados en los Grupos de Cirugía Reconstructiva Urológica y Andrología de la Asociación Española de Urología (AEU) para conocer la repercusión asistencial sobre la actividad clínica y quirúrgica en ambas subespecialidades.

Resultados: Se alcanzó una tasa de respuesta del 75,8% con 91 encuestas recibidas. Previo al estado de alarma, el 49,5% disponía de uno a 2 quirófanos semanales, el 71,4% afrontaba una lista de espera quirúrgica de entre 3 y 12 meses, y el 39,6% atendía entre 20 y 40 pacientes semanales en consulta. Durante el estado de alarma, el 95,6% recibió directrices sobre cirugías a realizar, priorizando la cirugía urgente y la oncológica. En el 85,7% de los centros no se realizó ninguna cirugía andrológica ni reconstructiva. Alrededor del 50% de las consultas no fueron presenciales, recurriendo a la telemedicina (teléfono o e-mail) en la mayoría de los casos.

Conclusiones: Las repercusiones de la pandemia sobre las enfermedades andrológicas y las candidatas a cirugía reconstructiva fueron muy importantes. Tras casi 2 años del inicio de la pandemia, aún queda por determinar el verdadero impacto final en nuestro sistema sanitario.

Introduction

The health, economic, and social impact of the COVID-19 pandemic throughout the world is difficult to assess in all its magnitude. Even though nearly 2 years have passed since it began, it seems that its significance will be devastating, establishing a *before* and *after* at all levels.

From a urological point of view, we are aware that this pandemic has forced us to change the healthcare we provide, with an uneven impact depending on the nature of the diseases we treat. Andrological diseases and those subsidiary to reconstructive surgery are not usually considered a priority, so they have undoubtedly been pushed into the background both from the point of view of care in consultations and in their surgical approach.

To learn about the influence of the pandemic on andrological diseases and candidates for reconstructive surgery during the initial state of alarm, during the so-called first wave we proposed a national survey among urologists related to the working groups of both subspecialties, partners of the *Asociación Española de Urología* (AEU – *Spanish Association of Urology*).

Material and methods

A survey was designed with 24 items divided into 5 sections: sociodemographic data, usual activity before the state of alarm, surgical activity during the state of alarm, healthcare activity in consultations during the state of alarm, and foreseeable situation after the state of alarm (Appendix B Annex 1). The survey was supervised and approved by the coordinators of the Uro-Andrology and Urological Reconstructive Surgery working groups from the AEU.

From May 18–31, 2020, after the first wave of the pandemic was almost over, 120 survey invitations were sent via e-mail and via WhatsApp® to urology specialists with an interest in andrological disease and/or or urological reconstructive surgery, partners of the AEU. In total, 3 reminders were sent which included a link for access.

A descriptive statistical study of the survey responses was carried out so that the categorical variables were expressed in percentages and numerical proportion. An inferential statistical analysis was not carried out with the sociodemographic variables collected because the relationships that could be established were considered conceptually irrelevant.

Results

Of the 120 invitations, a total of 91 completed surveys were obtained, with a response rate of 75.8%. Of the 17 autonomous communities in our country, only 3 were left without representation: Castilla-La Mancha, Extremadura, and La Rioja.

80.2% (73/91) of the respondents were male and 71.4% (65/91) were under 50 years of age. 71.4% (65/91) worked in tertiary hospitals and 78.0% (71/91) in public teaching hospitals. More than 75% (70/91) of the urologists who responded to the survey considered themselves specialists in andrology or reconstructive surgery, or both.

In relation to the data provided prior to the state of alarm, under normal conditions, 49.5% (45/91) had one or two weekly operating rooms to treat both diseases, 23.1% (21/91) used to face a surgical waiting list of less than 3 months, and 71.4% (65/91) had surgical waiting lists of between 3 and 12 months. The most frequent situation was to see between 20 and 40 patients per week in consultation in 39.6% (36/91) of the respondents, while 18.7% (17/91) saw between 40 and 80 patients per week.

In terms of the data on the period during the state of alarm, 86.8% (79/91) of the urologists surveyed continued to work as urologists and 95.6% (87/91) received specific guidelines on how to act during the pandemic. Almost 100% (90/91) were forced to prioritize oncological surgery and surgery derived from the emergency room. 85.7% (78/91) stated that they had not performed any andrological or reconstructive surgery, with similar data in their private activity. Regarding healthcare activity in consultations, those surveyed stated that 27.3% of general urological disease consultations and 56.0% of andrological or reconstructive disease consultations were not in person. 39.6% (36/91) of the respondents reported that at least 50.0% of the consultations were carried out through telemedicine, 93.0% being by telephone or e-mail.

The opinion of those surveyed after the state of alarm reflected that 93.4% (85/91) believed that there would be negative repercussions on outpatient and surgical care. With regard to the surgical waiting list, 61.5% (56/91) thought that it would be between 3 and 6 months long. However, in the private sphere, only 28.3% believed that the healthcare load of these diseases would increase after the state of alarm.

Discussion

During the state of alarm, urological care was based on the basic principles of preventing COVID-19 infection in the population, reducing face-to-face consultations, and increasing the protection of exposed personnel. At the same time, an attempt was made to carry out optimal clinical care, trying to reduce the healthcare load in the intensive care units[1].

With these objectives, urological activity during the first wave of the pandemic was substantially modified, proposing various controlled healthcare strategies[2–4]. In fact, scientific societies and various healthcare systems recommended canceling elective surgeries[5]. Worldwide, it is estimated that 72.3% of scheduled surgeries were canceled or delayed during the 3-month peak period of the pandemic. That is more than 28 million procedures, where 90.2% were surgeries of benign diseases and only 8.2% were oncological diseases[6]. In relation to urological interventions, in Italy urological surgery was reduced by 78%, and up to 94% in Lombardy, the area with the highest incidence of cases. Likewise, the reduction in oncological and non-oncological urological surgical activity was 36% and 89%, respectively[7]. In this context, the European Association of Urology (EAU) published a series of recommendations for the management of urology patients during the pandemic. In accordance with these guidelines, surgical activity was drastically reduced in Spain, with the exception of urgent and oncological diseases.

Most andrological and reconstructive surgeries are included in low or intermediate priority categories and can be postponed from 3 to 6 months[8]. In relation to andrological surgeries, the exceptions are prosthesis explant since it can rapidly progress to a systemic infection[4], and seminal cryopreservation prior to orchiectomy or chemotherapy for testicular cancer[8]. In terms of reconstructive surgeries, alternative measures such as suprapubic diversions or catheters with prior incision/dilation are proposed, as long as there is a risk of renal function deterioration or recurrent febrile urinary tract infections[9]. In line with the above, our results showed that andrological and reconstructive surgeries have been reduced by 85.7%.

From a critical analysis, there were and still are several challenges in managing sexual health during and after the COVID-19 pandemic. The situation had the logical repercussion on mental health caused changes in habitual sexual behaviors, in part motivated by the recommendation to avoid physical contact, which increased behaviors such as the consumption of pornography, masturbation, and an increase in sexual gender-based violence.[10]. Furthermore, possible cases of sexual transmission of COVID-19 through seminal fluids, vaginal fluids, or feces have been published[11–14]. This uncertainty generated sexual inhibitory behaviors, motivating or aggravating already present sexual dysfunctions. Fortunately, the International Society for Sexual Medicine (ISSM) published a document affirming the safety of sexual encounters[15].

Telemedicine through telephone contact or videoconferencing was an excellent measure to achieve healthcare objectives during the first wave of the pandemic, mainly due to its low cost and flexibility of use[8,16]. Through an exhaustive analysis of 399 consultations scheduled during the pandemic, it was observed that 84.7% of contacted patients wanted a telematic consultation, 17.3% refused it due to technical limitations, and only 25% preferred a face-to-face consultation[17]. In the field of urology, different studies have not shown negative effects derived from virtual follow-up[18–21]. However, telemedicine requires infrastructure, internet connection, and practical competence, as well as being supported by law and cybersecurity regulations. In Spain, it is still less widely used since only 40% of those surveyed were able to treat 50% of patients via telemedicine consultations. Most likely a result of being forced by circumstances, the figures increased in the short- and medium-term. Without a doubt, a drop in the average age of staff will facilitate their future use. In fact, the pandemic should not imply an absolute annulment of the approach to male sexuality, being an optimal field for the development of virtual assistance. A group of experts published a series of recommendations for the management of andrological disease from virtual platforms, stating that most of these can be diagnosed and treated correctly, with the obvious limitation of the impossibility of physical examination of the patient. This may be partly salvageable, though, through self-examination or virtual eye contact via video call[22]. These virtual meetings can be uncomfortable for patients, especially in periods of confinement, due to the close presence of family members and a lack of intimacy[10]. Even so, telemedicine seems to be here to stay. Its routine use will gradually increase acceptance among professionals and patients, as is already evident among psychologists[23] and nutritionists[24], who have been using it successfully for years.

Few surveys have been carried out to assess the impact of COVID-19 on our clinical and surgical urological practice. In fact, the survey we present is the only one to assess the impact on andrological and reconstructive disease. The International Society of Urology (SIU) recently published a survey sent to its members with the aim of taking a snapshot of the global panorama in this regard. The response was 32% (798 respondents), 42.4% were under 39 years old, 46.6% worked in a university hospital and 28.8% in a private center. In reference to European urologists, 12.7% completely suspended consultation, being carried out through telemedicine in 82.7%, and only 4.7% remained unchanged. 40.2% reduced elective surgeries by more than 75% and 28.8% suspended them completely, limiting themselves only to urological emergencies. Surveys of gastroenterologists[25] and neurosurgeons[26] show similar data. In our survey we achieved a very high response rate (75%), and likewise with a majority of urologists under 50 years of age, in public healthcare and in tertiary care hospitals.

Throughout the pandemic, conferences and scientific events were cancelled, postponed, or changed to a virtual format. This has been seen as an opportunity to explore new hybrid versions of these events, which could lead to cost reduction and the possibility of increased attendance[27]. Andrological and reconstructive research activity was also clearly reduced, in part due to obvious difficulties in recruiting and clinically monitoring patients. In addi-

tion, it is foreseeable that the economic crisis associated with the pandemic will limit resources allocated to research, so that sexual and reconstructive medicine are forced to be more competitive in this new scenario[16].

In relation to academic training during the first wave of the pandemic, there are numerous data that ensure a deleterious effect on it. A survey of Italian residents, with a response rate of 61%, showed a reduction in clinical (41.1–81.2%) and surgical (44.2–62.1%) activity, especially affecting residents in their last years of training[28]. Another survey conducted in the US through the American Urological Association, with a response rate of 31%, showed a clear reduction in surgical volume (83–100%, in all subspecialties) and an increase of 99% in telemedicine, with 20% of those surveyed assigned to care in other services. 79% of those surveyed perceived a negative impact on their training and the acquisition of skills at the end of the residency[29]. These findings are of particular interest in relation to reconstructive and andrological surgeries, where resident training depends on a few months of rotation within the same department or in another hospital. The role of tutors is essential for trying to compensate for this deficit, facilitating attendance at specific training activities and promoting virtual training.

The greatest challenge now is the recovery of urological activity after the pandemic. A triage of urological disease based on its priority and resources would be recommended. Each case should be individualized and possible treatment alternatives, which can offer a break until we are in better conditions, should be assessed. In relation to andrology, prioritization may be high in the case of priapism and penile prosthesis infection/extrusion, and low for implantation or surgery for Peyronie's disease. As a proposal for reconstructive disease, the prioritization may be intermediate in the case of urethral dilations, urethrotomies, and suprapubic cystostomies—and low for urethroplasties[30]. It is estimated that if the baseline surgical activity prior to the pandemic managed to increase by 20%–30%, it would take 45—30 weeks, respectively, to solve the delays in waiting lists[6]. In this sense, it would be advisable to develop efficient models, such as minimally invasive procedures or outpatient surgery, to increase surgeries[16]. Spanish urologists verified this negative impact of the pandemic by accepting an added delay in surgical waiting lists of between 3 and 6 months.

Our survey has been an attempt to extract a snapshot of the impact of the first wave of the COVID-19 pandemic in Spain. However, it is not without limitations that should be noted. Case incidence and case fatality were variable within the different regions at the time the survey was conducted. Epidemiological data are not available, so no conclusions can be drawn about the prevalence or incidence of the variables studied. This study only allows conclusions to be drawn about the perception of specialized urologists regarding the health emergency in their own clinical setting. However, it should also be noted that the survey focused on specialists in andrology and reconstructive surgery, covering almost the entire national geography.

As of today, being able to state that we are probably at the beginning of the end of this pandemic, our group is designing a new opinion poll to determine the real impact of the COVID-19 pandemic on these 2 urological subspecialties. With this new survey we will be able to determine if the negative impact of the COVID-19 pandemic on our health system remains or has been counteracted by appropriate compensatory measures.

Conclusion

According to our survey results, the repercussions of the first wave of the COVID-19 pandemic on andrological diseases and diseases that are candidates for reconstructive surgery were significant, with delays in consultation and increased waiting times for surgery. It remains to be determined whether our healthcare system has been able to recover and solve the healthcare standstill created in the first months of the pandemic.

Conflicts of interest

The authors declare that they have no conflicts of interest.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.acuroe.2022.03.009.

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