

Short Communication

Waiting times for scoliosis surgery: A bigger problem after COVID-19; how we can face it?

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A global pandemic virus strikes the world by the end of 2019 and until the present moment the problem is not solved. The COVID-19 caused millions of hospitalizations, deaths, and collapsed entire health care systems around the globe. All kind of elective surgeries were postponed or suspended, for some conditions as pediatric spinal deformities like Adolescent Idiopathic Scoliosis (AIS) this delay can cause severe progression of the disease leading to poorer results in surgical treatment. As vaccination progresses, surgeons and health care managers must prepare to a safe and responsible return searching ways to reduce this collateral damage.

Key words: Scoliosis, COVID-19, spine, public health, waiting lists, adolescent idiopathic scoliosis

INTRODUCTION

By the end of 2019 until present day World is facing a Global pandemic caused by Coronavirus or COVID-19. Health Care systems, insurance companies, hospitals, surgeons, health care teams and patients were involved. Elective surgeries were canceled or postponed for several weeks and even months. Some hospitals and whole countries health systems collapsed forcing to redirect all resources to this infectious disease and a safe return to elective surgical procedures still unclear. For some pathologies like Adolescent Idiopathic Scoliosis and other pediatric Spinal Deformity the impact will be disastrous due the progressive feature of this condition. Besides waiting lists keep growing on and on.

Scoliosis it's a three-dimensional deformity of the spine with vertebral spine rotation in the axial plane, coronal translation, and sagittal hypokyphosis. Spinal deformities can occur for many different reasons and Adolescent Idiopathic Scoliosis (AIS) is by far the most common type of scoliosis affecting 0,47%- 5,2% of population and despite all efforts the primary cause still unknown (Konieczny et al., 2013).

DESCRIPTION

For such a long time before pandemics waiting times and waiting lists for AIS surgery were a major concern specially

in countries with a Public based health care system, like U.K., Canada, Brazil and almost whole Latin America. Dabke et al. in 2006 published about waiting list for AIS surgery for his clinic in the UK and waiting time was about 7.8 months for an first appointment then 10 months more for surgery, and he also described more extensive surgery and significant curve progression sometimes requiring changes in surgery plan (Dabke et al., 2007). In 2008 Clark published in The Lancet a comment about the concern of waiting times about 6 to 9 months in U.K. and one year in Canada and how does it affect the patients (Clark, 2008). In 2018 Brazil waiting time were about 21 months average (Asano et al., 2011).

Overall, there is a lack of information of waiting times in other parts of the world, and we believe that after pandemic the problem will be bigger.

It's well known that patients who waited longer than six months for surgery had greater progression of curvature, longer surgeries and longer stays in hospital. These patients also had less surgical correction than patients who waited less than six months for surgery. And all patients that required additional surgery waited more than three months, that occur specially in younger patients, as they grow up curve angle can increase and get more stiff (Ahn et al., 2011, Miyanji et al., 2015). Bigger and stiffer curves makes surgery more difficult requiring more osteotomies, more pedicle screw density and more special maneuvers like direct; vertebral rotation, distraction, compression, in situ correction, and many others what leads to

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more blood loss, longer surgeries and sometimes insufficient correction.

Scoliosis progression is related to age, skeletal maturity, pre menarche, type of curve, vertebral rotation, curve angle (Cobb angle) in the moment of diagnosis, velocity of curve progression (Ah de et al., 2021). Patients that had more than 60 degrees of progression in one year had 70% chance of been operated while patients that had more than 10o degrees had 100% chance of been operated (Coillard et al., 2014).

As long patients wait for surgery, they suffer not only curve progression, but increasing of pain, dissatisfaction, self-esteem problems, and poor quality of life. Patients with progressive scoliosis have worst scores in health-related quality of life questionnaires (Ah de et al., 2021).

Waiting lists for surgeries are a common problem in many countries specially in those with public health care systems, and this create dissatisfaction, among surgeons, patients and their families. And for sure COVID-19 pandemic will affect negatively this situation. Initial impact can already been seen, Newman et al. described an 64% decline in referrals of pediatric spinal patients during first half of 2020 and Piero-Garcia found 94% decline in orthopedic pediatric elective surgery in a single center during first months of 2020 (Newman et al., 2020, Peiro-Garcia et al., 2020). Anari et. al proposes categorization of spinal pediatric cases during pandemic: Class 1, Emergency: myelopathy, tumor, cauda equina Class 2, Urgent (<2 months): Mehta cast, patients under traction, Early onset scoliosis (EOS) first instrumentation, and AIS with Risser 0 or Sanders 3; Class 3 Semi-Urgent (2 to 4 months): EOS lengthening, AIS Risser 1-4, Neuromuscular with stiff curve and Class 4, Elective (4 to 6 months: EOS final fusion, AIS Risser 5, Neuromuscular with flexible curve (Anari et al., 2020).

CONCLUSION

As vaccination progresses around the world patients and hospitals returns to routine elective surgery health care managers, politicians, and surgeons will need to manage waiting lists with fund-raising, human and hospital resources optimization, and categorization standards like priorities scores similar to transplant waiting lists. Regardless of all effort scoliosis patients and their families still have this pandemic collateral damage.

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CONFLICT OF INTEREST

None declared

REFERENCES

1. Ahn H, Kreder H, Mahomed N, Beaton D, Wright JG (2011). Empirically derived maximal acceptable wait time for surgery to treat adolescent idiopathic scoliosis. *CMAJ*. 183: 565-570.
2. Anari JB, Baldwin KD, Flynn JM, Cahill PJ (2020). What's important: Managing the impact of coronavirus on pediatric spine surgery. *JBJs*. 102: e94.
3. Araujo Ono AH, Marcon RM, Guiroy A, Cristante AF, Filho TEP (2021). Risk progression in adolescent idiopathic scoliosis: Literature review and scale proposal. *J Orthop Physiother*. 4: 1-15.
4. Araujo Ono AH, Marcon RM, Guiroy A, Cristante AF, Filho TEP (2021). Adolescent idiopathic scoliosis progression and quality of life. Correlation between SSS-IoT risk scale score and the main factors determining the disease potential progression. *J Orthop Physiother*. 4: 1-10.
5. Asano LYJ, Filézio MR, Defino MP, Andrade VAD, Cesar AEM, Rodrigues LMR (2018). Radiographic implications of the surgical waiting list for the treatment of spinal deformity. *Coluna/Columna*. 17:19-22.
6. Clark S (2008). Waiting times for scoliosis surgery. *The Lancet*. 371: 10-11.
7. Coillard C, Circo AB, Rivard CH (2014). A prospective randomized controlled trial of the natural history of idiopathic scoliosis versus treatment with the Spine Cor brace. Sosort Award 2011 winner. *Eur J Phys Rehabil Med*. 50: 479-487.
8. Dabke H, Mehta J, Jones A, Ahuja S, Howse J, Davies P (2007). Should patients with scoliosis be kept on a waiting list. 255: 5-8.
9. Konieczny MR, Senyurt H, Krauspe R (2013). Epidemiology of adolescent idiopathic scoliosis. *J Child Orthop*.7: 3-9.
10. Miyajji F, Newton PO, Samdani AF, Shah SA, Varghese RA, Reilly CW, Mulpuri K (2015). Impact of Surgical Waiting-List Times on Scoliosis Surgery: The Surgeon's Perspective. *Spine*. 40: 823-828.
11. Newman M, Garrido E, Tsirikos AI (2020). Initial impact of COVID-19 on paediatric spinal services in Scotland. *BMJ Paediatr Open*.4: e000826.
12. Peiro-Garcia A, Corominas L, Coelho A, DeSena-DeCabo L, Torner-Rubies F, Fontecha CG (2020). How the COVID-19 pandemic is affecting paediatric orthopaedics practice: A preliminary report. *J Child Orthop*. 14:154-160.