

Impact of the Sanitary Confinement Resulting From COVID 19 on Pediatric Emergencies in Maxillofacial Surgery

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Abstract

Original Research Article

The pediatric population constitutes a large part of the admissions to maxillofacial emergencies, the health confinement following the declaration of the state of alert as a consequence of the COVID 19 pandemic has modified the behavior of the Moroccan population. In order to study the impact of the lockdown on pediatric maxillofacial emergencies, we conducted a retrospective descriptive and comparative study over a period of 2 months from February 16, 2020 to April 16, 2020: one month before and during the lockdown following the COVID 19 pandemic of pediatric maxillofacial surgery emergency admissions at the MOHAMMED the 6th University Hospital of MARRAKECH. We included the entire pediatric population admitted to the maxillofacial surgery emergency room, ranging from 0 to 15 years of age. The data were collected from the registers of maxillofacial surgery emergencies for two consecutive years.

Keywords: Covid 19, maxillofacial surgery, emergencies, Pediatric.

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INTRODUCTION

In the month of March 2020, the WHO declared a viral pandemic called COVID 19 due to a little-known virus: SARS-COV 2, which is killing thousands of people so far.

As a country affected by this epidemic, the Moroccan government declared on March 16th a state of health alert, 14 days after the first case of COVID 19 imported from Italy was confirmed.

Since all our hospital structures were focused on the reception, hospitalization and management of COVID 19 patients, the socio-demographic and epidemiological criteria of the patients seen in the emergency room were modified by the sanitary confinement, in particular those of the pediatric maxillofacial emergency room.

The purpose of our study is to investigate the impact of containment on the profile of pediatric maxillofacial surgery emergencies, as well as the particularities of their management.

MATERIALS AND METHODS

This is a monocentric retrospective comparative study over a period of 2 months: from

February 16th to April 16th, 2020 of the pediatric maxillofacial surgery emergency admissions of the University Hospital MOHAMMED VI of MARRAKECH, having included all the pediatric population admitted to the maxillofacial surgery emergency room ranging from 0 to 15 years old, divided into two groups.

The data were collected from the records of maxillofacial surgery emergencies where all admissions are recorded. We studied the epidemiological and clinical parameters of these patients.

The analysis of these data was performed comparatively between the period before the health containment from February 16 to March 16, 2020 and after the health containment from March 16 to April 16, 2020.

RESULTS

One month after the introduction of the COVID 19 pandemic health containment, we admitted 74 children to the pediatric maxillofacial emergency department, compared with 240 admissions one month before the health containment (Figure 1). The evolution of this number of admissions over the weeks clearly decreased throughout these two months, from 72

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admissions to 47 admissions from the 1st to the 4th week of the month before the health confinement, i.e. a

decrease of 45%, and then progressively decreased to 19 and then to 9 admissions per week (Figure 2).

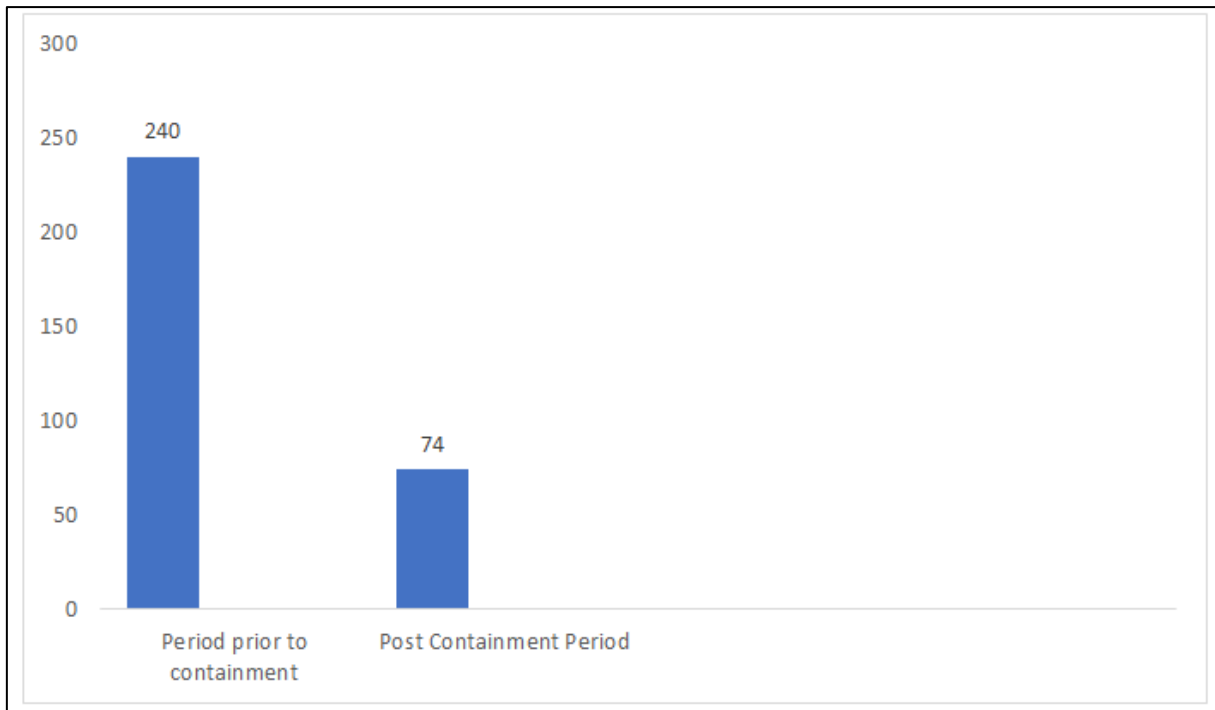


Figure 1: Total number of pediatric admissions before and during containment

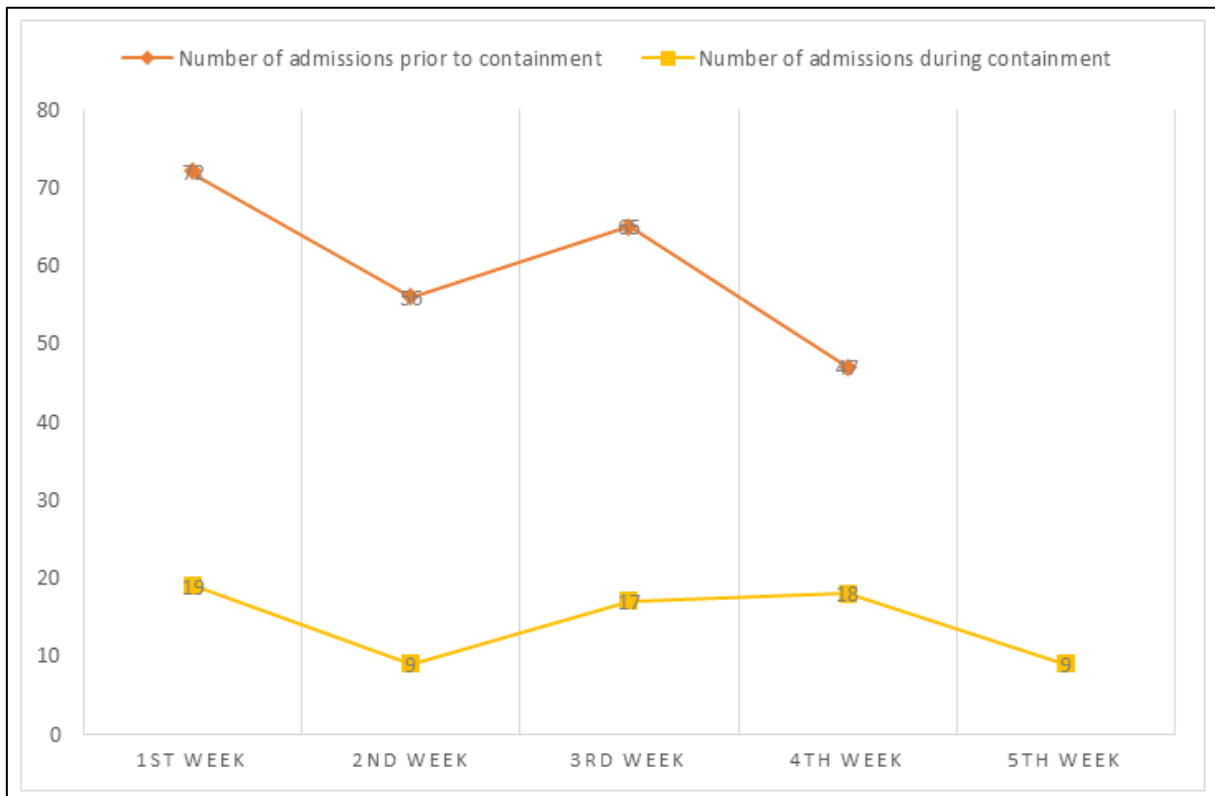


Figure 2: Changing pattern of admissions per week before and during the health confinement

The age range of patients admitted to pediatric emergencies varies from a 10-day-old infant to a 15-year-old child. The average age of patients admitted during the period before the lockdown is 7 years; the

average age of patients seen after the lockdown is 6 years.

We observed a clear male predominance in our series; we admitted 177 male patients, representing 73.8% of the total number of admissions before the health confinement, and 63 female patients, representing 26.3%, with a sex ratio M/F of 2.8.

During the lockdown, 45 patients were male, representing 60.8%, and 29 patients were female, representing 39.2%, with an M/F sex ratio of 1.5 (Figure 3).

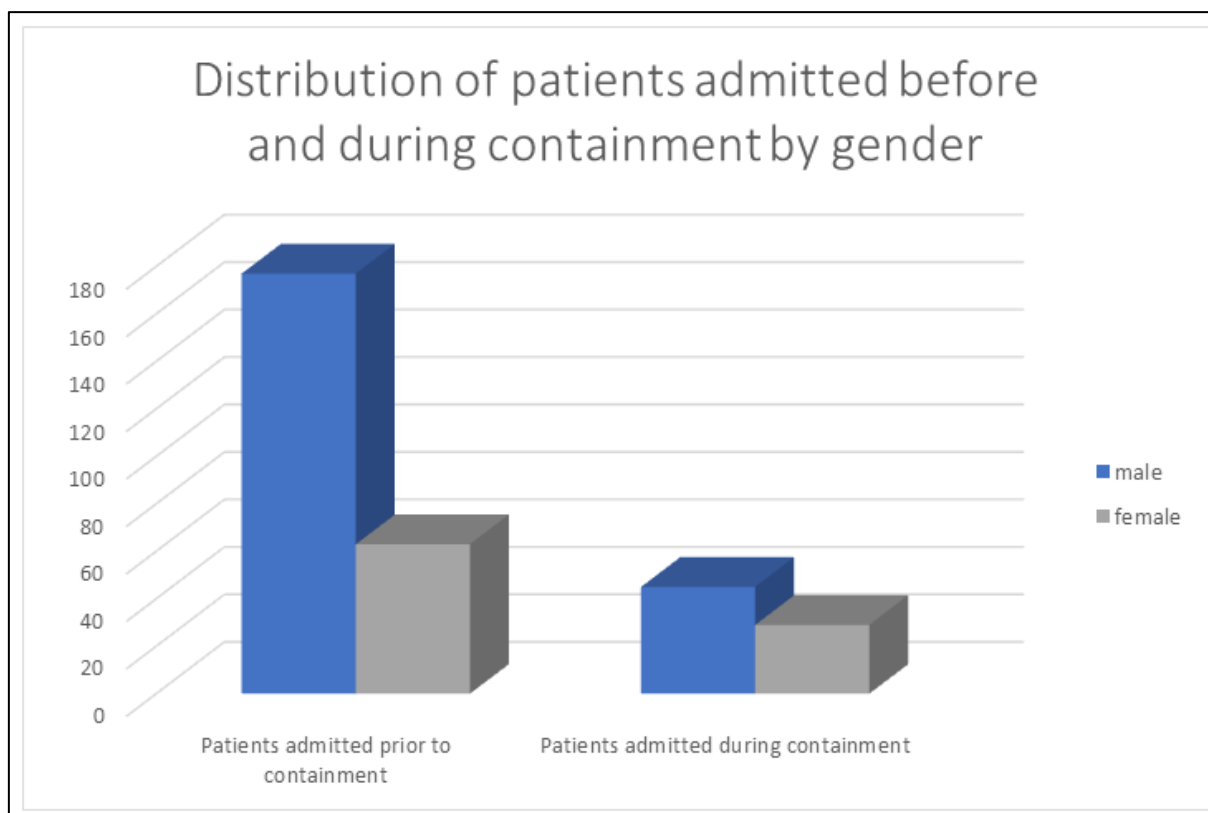


Figure 3: Distribution of patients admitted before and during containment by gender

Out of a total of 240 patients admitted before the confinement, 223 are from Marrakech or 92.9% and 17 patients are from the regions: Ait ourir, Amizmiz, Kelaa, Loudane, Safi, Sidi zouine, Souihla, Tameslouht and Youssoufia i.e. 7.1%.

98.6% of our patients admitted during the confinement are from Marrakech, 1 patient of our series is from Benguerir representing 1.4%.

The pediatric emergencies admitted were dominated by wounds, 158 wounds treated before the

confinement, including 55 frontal wounds, and a total of 55 wounds during the confinement, including 21 frontal wounds.

49 facial fractures were admitted before containment versus 6 fractures during containment.

20 mild facial traumas before confinement versus 5 during confinement, 11 alveolar-dental traumas and 2 odontogenic facial cellulites versus 4 and 3 respectively (Table 1 and Figure 4).

Table 1: Distribution of emergency types before and during containment

Types of emergency	laceration	Benin Facial trauma	Alveolodental trauma	Fractures				Cellulitis
				Orbitozygomatic	nasal	frontal	mandibular	
Period prior To containment	65,8%	7,9%	4,6%	20,4%				0,8%
				0,8%	15,8%	0,8%	2,9%	
During the containment	74,32%	6,7%	5,4%	8,10%				4,05%
				1,35%	5,4%	0	1,35%	

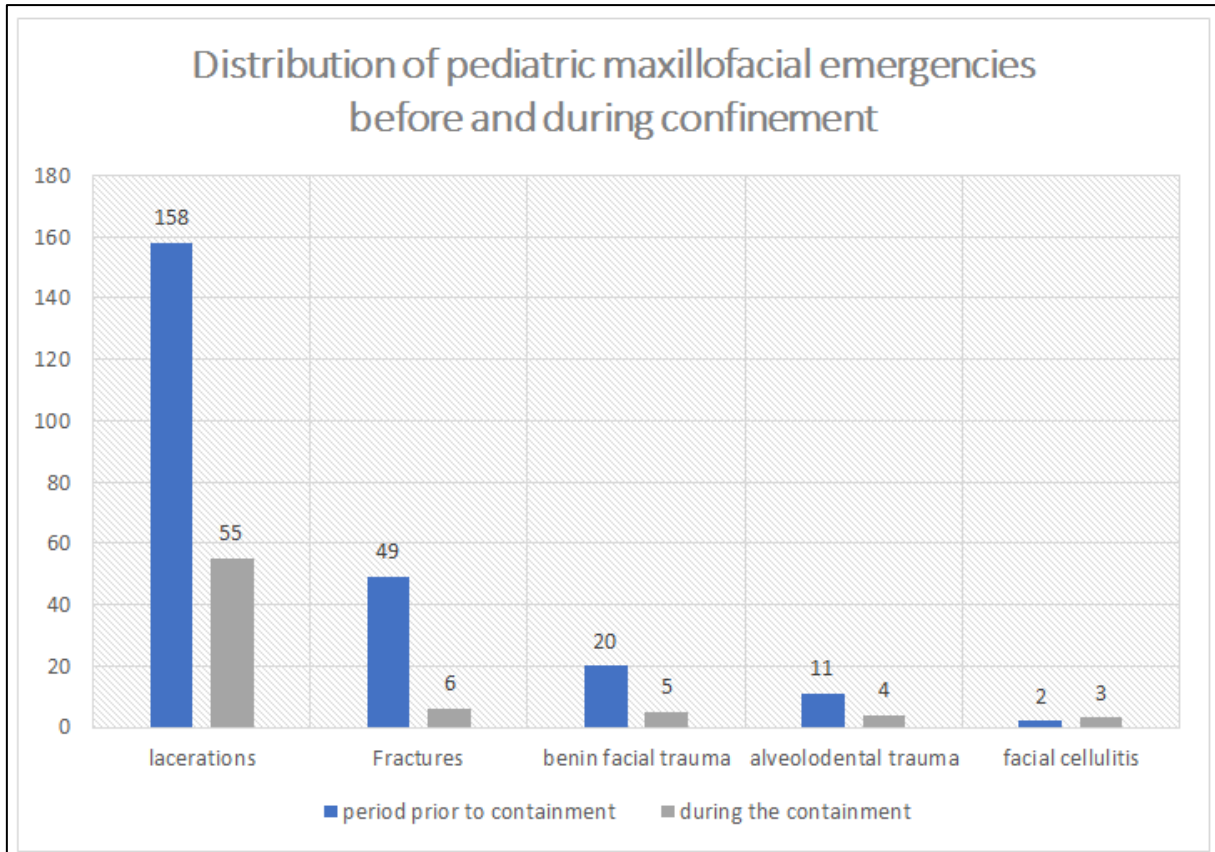


Figure 4: Distribution of emergency types before and during containment



Image 1: Fracture of the external wall of the orbit in a 14-year-old child

Pediatric maxillofacial emergencies are dominated by trauma, we studied the different mechanisms of trauma and found that during the pre-confinement period, trauma was mainly due to falls outside the home (142 patients) followed by MVAs and then assaults.

During the containment period 55 injuries occurred at home, including 40 falls and 10 play accidents (Figure 5).

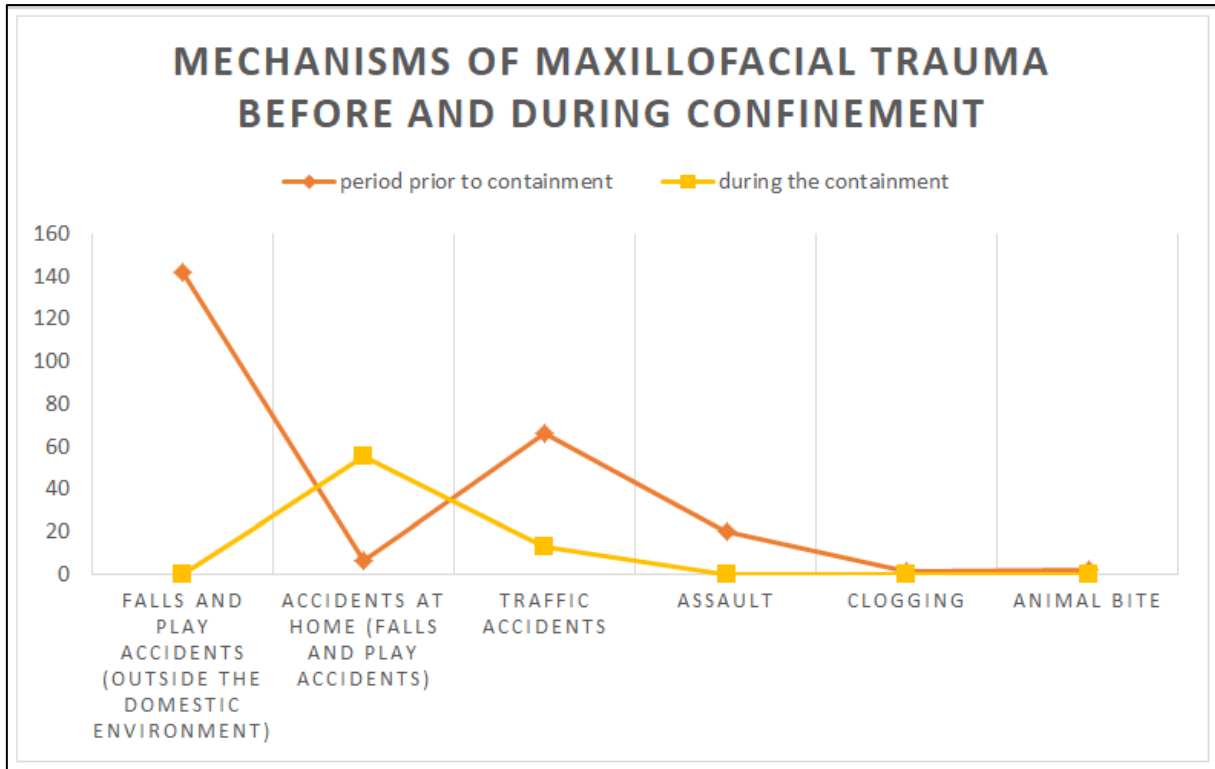


Figure 5: Mechanisms of maxillofacial trauma before and during confinement



Image 2: Mandibular trifocal fracture in a 6-month-old infant following a fall from stairs

The evolution of the number of trauma mechanisms during the confinement is very interesting, the number of domestic accidents decreased from 13 accidents in the first week to 7 accidents in the fifth

week. The accidents on the public road decreased from 6 accidents in the first week to 1 accident in the fifth week (Figure 6).

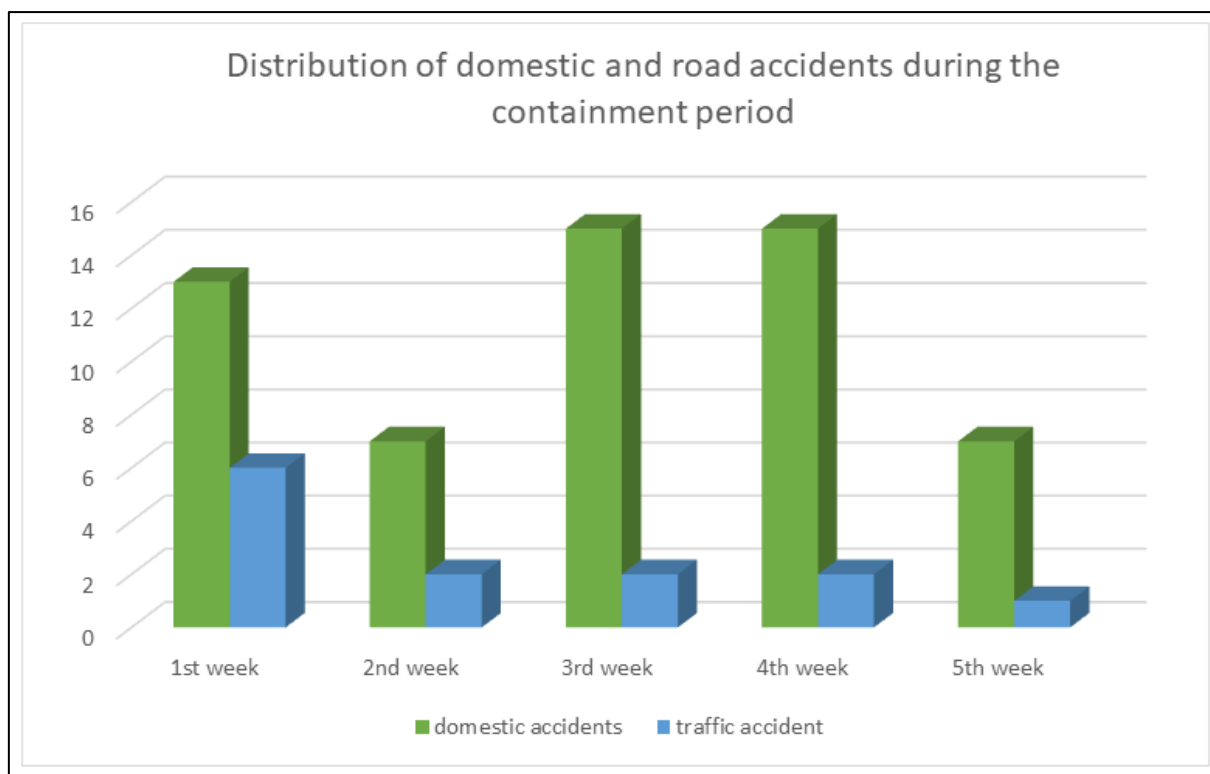


Figure 6: Evolutionary profile of trauma mechanisms by week during the confinement period

The number of children operated on in the central operating room before the health containment is 7 children, versus 11 children operated on after the containment.

	Number of children seen in the emergency room	Number of children operated on in the OR
Period prior to containment	240	7
Period during confinement	74	11

DISCUSSION

On March 11, 2020, the World Health Organization declared the COVID pandemic [1].

Several global recommendations have been proposed for the protection of patients and medical staff during this pandemic.

To our knowledge, no such study has been done to date. Since the virus is transmitted by the respiratory route: generation of aerosols, medical personnel in close contact with the aerodigestive tract are more exposed to infection, especially oral and maxillofacial surgery teams [2].

We have also adopted a strategy of protection against the virus in the management of our emergencies, the wearing of masks, face shields, overshoes has become mandatory. Our main objective is to limit our contact with the patient and to limit the duration of the patient's stay in the hospital [3], in particular the pediatric population, which is also in line with global recommendations. This contact time was necessarily reduced during the containment period by the application of safety measures such as the use of the

operating room for 15% of patients seen in the emergency department, whereas before containment and during the month of the study, 3.3% of procedures were performed in the operating room, thus excluding wounds and favouring outpatient management. This management is certainly less economical but more risky in the context of COVID 19, as it involves more contact with the patient and the risk of contracting a possible coronavirus infection.

In Italy, confinement has reduced accidents on public roads but increased falls in the domestic environment, resulting in mandibular fractures in the adult and pediatric population due to slips and falls on children's toys or wet surfaces [4].

Because children are not allowed in play spaces, their domestic confinement also puts them at risk for injuries.

Sanitary confinement has had several impacts on the profile of pediatric maxillofacial emergencies, it has significantly decreased the number of pediatric maxillofacial surgery admissions to less than 70% of patients, which is perfectly explained by their stay at

home. These numbers continue to decrease with each passing week.

The characteristics of our pediatric population have not changed, the average age of our patients is 6-7 years and we still notice a clear male predominance, this is the period when the child has already acquired a certain autonomy and where the play activity is more developed [5].

Nevertheless, we do not see any more patients coming from outside Marrakech during this period of confinement, which can be explained by the lack of means of transportation during this state of alert or the distance from the hospital.

We have remarkably noted the decrease of public road accidents, accidents outside home (fall or play accidents) and assaults of less than 80%, even during the period of confinement the rate of traffic accidents decreases each week by almost 60%, from 6 accidents in the first week to 2 and then to 1 traffic accident in the 5th week, this is explained by the measures taken by Morocco including quarantines, travel restrictions, closure of schools, stadiums, sports halls, cinemas, theaters, restaurants and workplaces, promoting telecommuting when possible. These measures have been combined with travel restrictions, both between and within cities.

Unfortunately, accidents in the domestic environment have increased significantly during this period of confinement by more than 85%. We have seen falls from stairs, slipping on wet surfaces, playground accidents and fights between brothers and sisters.

The type of emergencies observed has not changed, we see less but our emergencies are still dominated by wounds and fractures. We have also noticed a slight increase in the number of cellulitis, which can be explained by the difficulty of access to dental care or the poor oral hygiene of children.

It is then recommended to use more preventive measures, because these traumas are avoidable, depending on the age of the child, it is possible to install barriers at the top and bottom of the stairs; to be more vigilant when the child is on a high surface, such as a table or a bed; or to organize the children's play areas within the home [6].

It is also recommended to reduce the duration of consultation and hospitalization of patients, as we have advocated in this study, by sorting them into patients who should be operated on urgently and those who can be operated on later or not at all, such as condylar fractures [7].

CONCLUSION

The consequent containment of COVID19 has certainly limited the presence of the pediatric population outside the home and on the public highway, but it has also changed their behavior at home, which explains the decrease in the overall number of emergency room patients at the cost of an increase in domestic trauma.

It imposes a contextual strategy: prevention measures coupled with a more adequate protection against the coronavirus during their care in the emergency room.

It is therefore essential to educate our population on the importance of staying at home but also on the education and protection of children within the home, and to observe good oral hygiene.

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REFERENCES

1. WHO announces COVID-19 outbreak a pandemic [Internet]. World Health Organization; 2020 [cité 12 mai 2020]. Disponible sur: <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic>
2. Hsieh, T. Y., Dedhia, R. D., Chiao, W., Dresner, H., Barta, R. J., Lyford-Pike, S., ... & Hilger, P. A. (2020). A guide to facial trauma triage and precautions in the COVID-19 pandemic. *Facial plastic surgery & aesthetic medicine*, 22(3), 164-169.
3. Edwards, S. P., Kasten, S., Nelson, C., Elner, V., & McKean, E. (2020). Maxillofacial trauma management during COVID-19: multidisciplinary recommendations. *Facial Plastic Surgery & Aesthetic Medicine*, 22(3), 157-159.
4. Yadav, S. K., Khatana, S., & Kumar, A. (2020). Re: Covid-19 and ortho and trauma surgery: The Italian experience. *Injury*, 51(7), 1683. Disponible sur: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7187820/>
5. Item 32 Développement psycho-moteur. 21.
6. Pédiatrie S canadienne de. La prévention des blessures à domicile en période de COVID-19 Société canadienne de pédiatrie [Internet]. [cité 12 mai 2020]. Disponible sur: <https://www.cps.ca/fr/blog-blogue/la-prevention-des-blessures-a-domicile-en-periode-de-covid-19>

7. Holmes, S., Bhatti, N., Bhandari, R., & Chatzopoulou, D. (2020). Toward a consensus view in the management of acute facial injuries during the Covid-19 pandemic. *British journal of*

oral and maxillofacial surgery, 58(5), 571-576.
Disponibile sur:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7151269/>