

Orthopaedic patient workflow in CoViD-19 pandemic in Italy

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ABSTRACT

CoViD-19 epidemic started in China in late December 2019, and soon spread, turning into a pandemic. All medical specialties have soon been involved in the management of CoViD-19 patients; the daily Orthopaedic activity has been affected profoundly by this dramatic health emergency. The present paper aims to summarize all the measures and changes that had to be made in order to avoid the healthcare system collapse in the most affected areas, and provides an operative flowchart.

Due to Italy's early involvement in the CoViD-19 pandemic, many international colleagues investigated how the Italian daily Orthopaedic activity has been affected by this dramatic health emergency. This paper aims to summarize all the measures and changes that had to be made in order to avoid the collapse of the healthcare system in the most affected areas.¹

On February 20th, 2020 a 38yo male patient was hospitalized for an uncommon severe acute respiratory syndrome (SARS), never detected in Italy before. It was soon recognized as SARS type 2 (SARS CoViD-2); tests carried out were diagnostic for Coronavirus, the same viral pathogen (SARS CoViD-2) accountable for the epidemic in China and the South-East Asian region since the end of December.

The rise in the number of cases has been fast and exponential, with 36 new diagnosis right during the following 24 h, this provoking a general alert state, above all in Lombardy. Healthcare authorities realized that if such a young healthy man, with no comorbidities, had worsened so badly to require an Intensive Care Unit (I.C.U.) transfer, many people, of all ages, were expected to be at risk.²

Health services were forced to adopt immediate restrictions for every kind of hospital activity, both to protect patients and to be prepared for the state of emergency that was likely to occur in a few weeks' time.

Elective surgeries were stopped; as for other surgical specialties, hospital beds of Orthopaedic department were made sure to be available, and health care workers were dislocated in the CoViD-dedicated wards.

The management of Orthopaedic and Traumatologic patients had to be completely rearranged.

All patients scheduled for an Orthopaedic surgery were informed it had to be postponed indefinitely; this caused discontent and discomfort,

especially in the early epidemic phase when the extent of the pandemic was unclear to the majority of the population.

The pain and discomfort produced by Musculoskeletal chronic diseases has been temporarily relieved with palliative painkillers, and conservative treatments such as joint infiltrations when unavoidable.

Medical clinics have kept on providing outpatients visits, albeit with adequate hygiene precautions and wearing personal protective equipment (PPE).

As soon as the lockdown was extended to the whole nation, restrictions for the population increased, in order to limit the personal risk of exposure to the viral agent.

Due to the impossibility to detect all asymptomatic carriers and given their contagiousness,³ some extraordinary measures became necessary to limit the contagions.

To date, April 5th, 2020, patients are admitted in Orthopaedic clinical office only in case of unbearable pain and early post-surgery follow-up. All non-urgent visits have to be postponed or have been encouraged to be carried out through telemedicine.

Rules have been applied to limit check-in desk queues and crowded waiting rooms; it was made compulsory for outpatients to wear protective gloves and face masks, to come to hospital alone or with paramedical staff if needed, and to seat at least 1 m away from other people.

Orthopaedic surgery, with the exception of traumatology and oncology, has been suspended, in order to guarantee free beds for CoViD + patients in ICU wards.

Lombardy has faced a crisis never seen before: the alert has been so critical as to require a different healthcare organization; entire hospitals have been completely dedicated to the huge number of CoViD patients.⁴

A hub and spoke organization has been put in place with an immediate-effect regional decree: the hub and spoke model avoided E.R.

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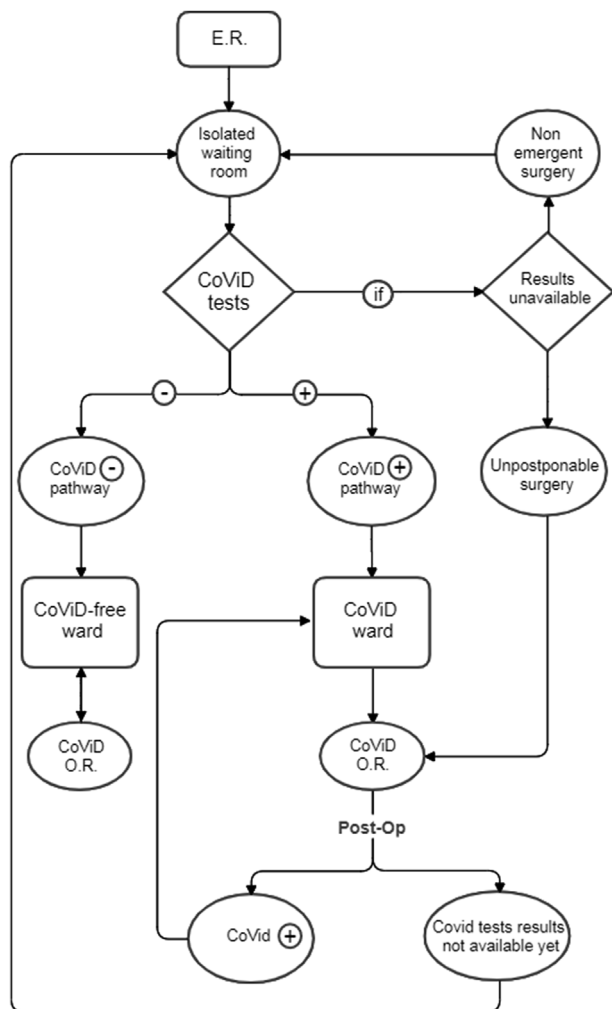


Fig. 1. Workflow for patients arrived in E.R. in an Orthopaedic Hub during CoViD-19 pandemic emergency in Italy.

overload and dedicated entire hospitals to CoViD management; at the same time this created safe CoViD-free paths for the other specialities.

According to triage criteria, patients are addressed to the reference-hospital for their pathology; patients are admitted in an Orthopaedic hub only for urgent conditions.⁵

At the same time, Orthopaedic wards but also all other surgical

wards, in CoViD hubs have been rearranged to be CoViD wards.

Although all patients must be considered as a potential source of contagion in the Orthopaedic Hub, two different routes to enter the ER have been predisposed for CoViD + and CoViD-negative patients.

All patients have been asked to wear PPE (surgical face mask and gloves), while health workers have been invited to wear FFP2 or FFP3 masks.

Body temperature is measured in every incoming patient entering an Orthopaedic hub; an oro-pharyngeal swab and a chest x-ray (this latter when considered necessary) are obtained, in order to detect asymptomatic or latent phase SARS-COVID-2 patients (See Fig. 1).

While waiting for the results, patients have to wait in a specifically predisposed waiting room.

- If the result turns out negative for Coronavirus infection and the patient is asymptomatic, he's admitted to the CoViD-free area of the hospital, where the staff and patients have to wear surgical masks even in the ward; surgeries are performed in dedicated OR, paying attention to safety standards.

- If a positive result is obtained instead, the patient is addressed to the CoViD + pathway: it includes dedicated staff, hospital rooms and OR. Two scenarios could be encountered: patients with flu-like signs and symptoms have their surgery postponed, while asymptomatic or pauci-symptomatic patients receive surgery in dedicated OR. Medical and paramedical staff have to wear goggles, double pair of gloves, water-proof surgical gown, shoe-cover, hair-cap, FFP2/FFP3 facial masks and a surgical mask over them, in wards as well as in OR. Relatives' visits have been forbidden in all hospitals.

Declaration of competing interest

Authors had nothing to disclose about conflict of interest.

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