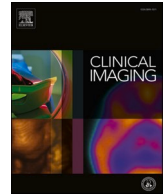




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Body Imaging

The radiologist empowerment through virtual multidisciplinary tumor boards: The commitment of oncologic care during COVID-19 pandemic

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As outbreaks surged worldwide, coronavirus disease 2019 (COVID-19) was declared a pandemic by the World Health Organization (WHO) on March 11th, 2020. As one of Europe's most affected countries, Italy undertook tight security measures, which included massive lockdowns, social distancing and prohibition of public events. In this scenario, Italian hospitals have been reprogramming their priorities to deal with the emergency, and major resources have been concentrated on safety measures for both patients and healthcare workers. As one of the first actions taken, all scheduled routine outpatient activities and medical congresses were postponed. Non-deferrable and urgent clinical assistance obviously did not. Continuity of care is of particular importance for cancer centers and those tertiary referral hospitals that are focused on oncologic patients. Cancer care cannot be discontinued, as timely medical or surgical interventions can be lifesaving, or at least can improve survival and quality of life. Several studies have highlighted the role of multidisciplinary tumor boards (MDT) as a mean to improve patients' outcomes through the comprehensive evaluation of each clinical case along with the available treatment options [1]. This notwithstanding, in a historic time when all reunions including medical boards are limited for hygienic reasons, gathering dozens of multidisciplinary specialists can be challenging.

At our Italian tertiary cancer center located in Lombardy [2,3], physicians received institutional guidelines that allowed only one specialist for each discipline to join in the discussion. Nevertheless, the strength of tumor boards is the collective, shared knowledge of an experienced group where each member provides significant inputs through diverse background, vision and professional trajectory. Besides representing an invaluable resource in the optimization of patient

management, as well as in the enrollment in clinical trials and for the continuing medical education, MDT has the opportunity to go virtual without losing its value. In fact, in case of the impossibility of sitting round a table just like during the current pandemic, telematic multimedia conferences represent a feasible strategy to keep up with the collective discussion. The radiologist embodies a pivotal role in a successful MDT by presenting the key images from which the multidisciplinary discussion takes off. Being familiar with the institutional picture archiving and communications system and working daily with advanced computer technologies, radiologists might also ideally lead virtual MDT. Furthermore, radiologists who do report oncologic imaging but do not constantly participate in MDT miss a unique opportunity either to show their added value to clinicians and patients, as well as to constantly improve clinical thinking and to ultimately contribute to the process of therapeutic decision-making [4].

Such operations dealing with the telematic transmission of sensitive data need to be reliable in terms of data security and protection of patient privacy. Several secure interactive video networks for virtual telematic e-meetings have been described, being those providing *end-to-end* encryption the most suitable to share relevant imaging findings, histological slides and clinical data.

The use of video conference apps and software has increased exponentially in the last few months, with up to a 1200% and 500% rise in daily download and online traffic, respectively [6]. Although several commercial products are available for private use, such health-care initiatives ideally require institutional interactive holistic dashboards that guarantee optimal security and quality of the transmitted content [7]. This is particularly indicated also in light of the increasing number

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of cyber intrusions registered during the COVID-19 emergency, which allowed unidentified individuals to invade private sessions through security flaws [8]. Step-by-step instructions with photos or videos should be provided to ease the configuration and to ensure that all steps required for security are followed. Practical recommendations to improve the security level of the e-meeting are 1) assigning an access password, 2) implementing a “waiting room” feature where members are individually admitted by the meeting host, 3) active monitoring of the participant list for unknown participants, 4) disallowing video recording of the e-meeting, 5) creating “breakout rooms” to sort members to sub-discussion groups [5]. Virtuous practices also include the organization by the IT department of web-based tutorial courses and the establishment of a dedicated line for immediate help. Noteworthy, such technologies should enable health-care workers to connect from their departments as well as from their own homes, as a substantial share of physicians may possibly be off-duty or homeworking to prevent hospital crowding. Moreover, it is important to recall that an ever closer collaboration between the MDT members is necessary to tailor specific therapeutic strategies according to the limited available resources [2]. Such worthwhile initiatives should be translated into every situation where MDT cannot take place, regardless of the geographical location or the level of health-care provided. Both providers located in rural or underdeveloped areas, as well as cancer centers lacking specific expertise, have successfully implemented virtual tele-oncology boards in different occasions [9].

The current COVID-19 emergency might have taken institutions unprepared and has subverted every clinical priority and organizational logistics. However, with the increasing number of affordable and secure technologies in telemedicine [10], implementing a virtual tumor board program within tertiary referral hospitals should represent a feasible goal for every health-care provider pursuing clinical excellence. A direct communication between radiologists and other members of the MDT represents a mainstay in the establishment of a successful virtual/in-person MDT, and typifies the full realization of the figure of the clinical radiologist. The multidisciplinary commitment to oncologic care should remain imperative regardless of the circumstances, as cancer may not forgive delays.

CRediT authorship contribution statement

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Declaration of competing interest

The authors declare no conflict of interest.

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