

The danger of inappropriate use of personal protective equipment

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The coronavirus pandemic is a global health emergency which has had widespread unforeseen mental health consequences. Those diagnosed with borderline personality disorder are predisposed to poor coping strategies to manage such stress and require intense psychological input which was not widely available during the peak of the pandemic. It is likely that the coronavirus outbreak has had a significant impact on the mental stability of such patients which aggravated deliberate self-harm behaviours.

A 20-year old psychiatric in-patient with borderline personality disorder, held under Section III of the mental health act, presented to the adult plastic surgery team in Bristol with localised infection of her right forearm. Foreign bodies were easily palpable and imaging revealed linear metal objects. The patient reported that she had removed metal strips from her collection of face masks and inserted them into her forearm as an act of deliberate self-harm. The patient was taken to operating theatre for removal of these foreign bodies under general anaesthetic. After twenty-four hours of antibiotics she was discharged safely back to the psychiatric ward.

Despite the epilogue of the COVID-19 pandemic facemasks are still mandatory within the hospital setting. Clinicians need to be aware of these unusual circumstances where a form of protective equipment was deconstructed to cause actual bodily harm. The purpose of this report is to promote awareness of this type of injury especially in those suffering from mental illness. The authors would suggest an alternative mask without any form of metal.

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INTRODUCTION

On March 11, 2020, the World Health Organization announced the coronavirus disease (COVID-19) outbreak as a global pandemic.¹ Government rules such as isolation, contact restrictions and economic shutdown presented an abrupt change to the psychosocial domain of the general population. Those diagnosed with borderline personality disorder (BPD) are already predisposed to poor coping strategies to manage stress² and are likely to have been negatively impacted from this.

The UK government enforced mandatory facemasks for all members of the public when entering indoor public areas. The rationale being that they will prevent spread of coronavirus droplets which is an added protective strategy when considering social distancing and regular hand hygiene. Face coverings are now mandatory within the National Health Service which should be worn by all staff and patients, unless exempted, in hospitals and community care establishments including psychiatric units.

The authors present a case involving a patient with BPD who deliberately inserted metal strips from face masks into her soft tissues whilst in a secure psychiatric unit. We would like to create an awareness of this method of injury especially for patients with psychiatric illnesses during these challenging times which are destabilising the mental health of such vulnerable patients.

CASE PRESENTATION

A 20-year-old Caucasian lady, with a history of BPD, anxiety and deliberate self-harm (DSH) was referred to the plastic surgery team in Southmead hospital, Bristol, with a soft tissue infection over her right forearm. She was under Section III of the mental health act (MHA) for deterioration of BPD and repeated episodes of DSH. She presented with a

three-day history of erythema, pain and swelling over her right forearm. Eventually, it was revealed to staff that she had been inserting metal strips into her forearm from a collection of face masks she had acquired overtime.

During history taking she answered questions appropriately and engaged well. She was accompanied by a member of the psychiatry unit. She had a baseline tachycardia of 90 beats per minute and was afebrile showing no signs of sepsis. Upper limb examination demonstrated a localized infection of her right dorsal forearm with erythema, swelling and tenderness. These metal foreign bodies were easily palpable with radiographs confirming the location of four metal wires superficially within the forearm and two metal strips in the hand (*Figure 1*).

After acquiring informed consent, exploration of her right forearm was performed under general anaesthesia. This procedure necessitated the use of mini C-arm fluoroscopic imaging to identify the location of the strips allowing precise planning of surgical incisions with minimum incision lengths. All four metal strips were found buried within the adipose tissue and retrieved successfully with no associated complications (*Figure 2*). A clinical decision was made to leave the two old metal wires in the hand in situ as they demonstrated no signs of infection. Following the procedure, she remained an inpatient for twenty-four hours for which she experienced a good recovery. She received a period of strict arm elevation along with a course of intravenous antibiotics before being discharged safely back to the psychiatry ward. There was no demonstration of any intent to perform acts of self-harm during her inpatient stay and she cooperated well with the hospital staff. She was discharged on a short course of oral antibiotics and no postoperative follow up was required.

Figure 1: Intra-operative radiograph demonstrating the metal strips in the right forearm

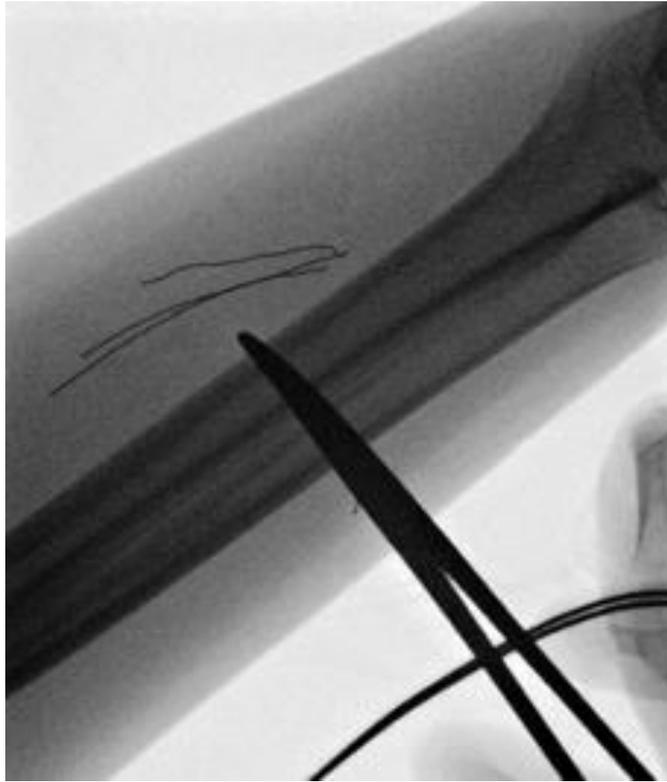


Figure 2: Four metal strips retrieved in theatre



DISCUSSION

The COVID-19 pandemic contributed to a degree of psychosocial impact on every member of society especially those suffering from psychiatric illnesses.³ An increment in figures of deliberate self-harm (DSH) was observed when social distancing was enforced during the pandemic.⁴ However, evidence is lacking regarding its incidence within psychiatric units. This is the first case report which describes a presentation of self-embedding using the metal strips of protective face masks.

Borderline Personality Disorder (BPD) is a significant psychiatric condition described as affect dysregulation, unstable self-image and DSH.⁵ Its incidence is approximately 2-6% according to recent epidemiological studies.⁶ Prevalence of DSH in the UK has been estimated to be between 4.6-6.6%.⁷ BPD symptoms have been revealed to be associated with earlier age of onset and incremental frequency of DSH.⁸⁻⁹ This patient presented in this report had a recurrent history of DSH originating during her early teenage years and had unfortunately presented with other forms of DSH after this episode. BPD patients share a strong predisposition for emotional and physical proximity with others which was suppressed because of social distancing rules due to the pandemic.¹⁰

Consequentially, the experience of lockdown was likely to be exhausting for these patients.¹¹ It is reasonable to believe that such isolation may have precipitated negative feelings about oneself resulting in conflicts secondary to misinterpretation

of distance from others, due to preventative health measures, as a sign of neglect or betrayal to these patients. As a result, this misperception of social distancing of others may have encouraged substance misuse as a form of therapy in order to deal with this loneliness.¹² Within the psychiatric unit members of staff and patients were practicing social distancing which mandated face mask use. Despite being under Section III the patient was still able to commit DSH on a few occasions on the psychiatric unit and only presented to staff after developing signs of infection. Clinicians need to be aware of such unusual circumstances where a form of protective equipment was deconstructed to cause actual harm warranting an operation under general anaesthetic. The authors propose an alternative mask using plastic strips for mental health wards as opposed to metal strips.

CONCLUSION

Measures that were put in place by public health authorities during the coronavirus outbreak such as social distancing and isolation precipitated the feeling of emptiness and aggravated the fear of abandonment in patients with BPD.³ The purpose of this report is to provide awareness of this method of injury with careful consideration of alternative forms of mask wear. It remains unpredictable as to how individuals with BPD will respond to current mask-wearing rules due to COVID-19 but, as clinicians, we have a shared responsibility to ensure the environment that are patients are treated in is safe.

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