

LETTER TO
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Abdominal Wall Hematoma Caused by an Exploded Phone and a Review of Mobile Phone-Related Hazards

Cep Telefonu Patlaması ile Oluşan Abdominal Hematom ve Mobil Telefonların Diğer Zararları

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Dear Editor,

With rapid developments in computers and other electronic technologies, telecommunications have become much easier. As a result, in the last 15 years, mobile phones have become a necessity in our lives. As almost everybody has a mobile phone, there has been increasing public interest in the potential health risks associated with their use. Since these devices have become an indispensable part of our lives, some new hazards directly or indirectly caused by mobile phones should be highlighted.

The most common direct hazards are potential carcinogenic effects due to low frequency radiation waves, particularly in terms of brain tumours (1-3). Before the use of mobile phones became widespread, exposure to near-field and comparatively high levels of microwave radiation was uncommon. Since these exposures are relatively new (only in the past 20 years or so), the importance of possible long-term effects such as cancer is controversial. While there are still insufficient data to present a final risk assessment, there is evidence from epidemiological and experimental studies that long-term exposure to emissions from mobile phones may lead to a small to moderate increased risk of developing certain types of cancer. With these findings, caution and taking protective measures are recommended, such as discouraging the use of mobile phones in children and advising a reduction in the length and number of calls (1).

Indirect effects such as interference with medical equipment (4) or increased risk of an accident when using a mobile phone while driving have also been studied (5). Due to the interference with medical equipment, changes in dose rates and incorrect monitor readings have been found in the past. As technology changes, the most recent evidence seems fairly clear. There is no significant danger from using mobile phones as long as they are 1 m away from sensitive equipment, and with most modern equipment, the safety margin is much greater, i.e. mobile phones are safe at least 30 cm away from equipment (4). Another indirect hazard of mobile phones, talking on the phone while driving, has become an important cause of accidents. Lambale and co-workers investigated the ability of drivers to detect a decelerating car ahead while engaging in mobile phone-related tasks. They concluded that neither a hands-free option nor a voice controlled interface removes the safety problems associated with the use of a mobile phone in a car (5). Mobile phone use while driving is banned by law in Turkey.

Mobile phone explosion is a rare and uncommon event. There is one report of an adult who was burned by an explosion while working on a petrol tank without any factors precipitating this explosion except for his mobile phone ringing (6). The exact mechanism of action seems to be uncertain; however, it was thought that the ignition of petrol vapours by the mobile phone could have caused the explosion. Although the risk may be minimal, because of the potential disastrous consequences, all petrol stations display signs informing people to turn off their mobile phones. In another case report of a mobile phone explosion, a 16-year-old female was burned by a spontaneously exploding mobile phone (7).

An explosion without flame occurred in our case and caused a haematoma. This is the first report of such an unusual event. A 54-year-old man was brought to our emergency department in June 2008. His complaint was a large bruise on his abdomen. While he was walking outside, he received a phone call. After talking, he placed the mobile phone inside the newspaper he was carrying in his hand. The phone exploded and hit his abdomen. It was broken into pieces. He said that he had been using the mobile phone for two years and that it was in quite good condition without any damage. He complained of pain in the bruised area. He had no history of medical illness.

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Figure 1. 12x13 cm abdominal wall haematoma in the epigastric area caused by an exploded phone



Figure 2. 4x3x2 cm contusion seen by ultrasound imaging

Upon physical examination, his vital signs were normal and his organ systems revealed no injuries except for the abdominal examination. There was a 12x13 cm haematoma on his epigastric area (Figure 1). An abdominal ultrasound was performed. The abdominal organs were normal and there was no fluid in the peritoneal area. A 4x3x2 cm contusion area was found under the bruise (Figure 2). The complete blood count, thrombocyte count and coagulation profile were normal. He was prescribed analgesics and was discharged with instructions. At the follow-up examinations on the third and tenth days after the injury, his bruise was still large and painful. Follow-up ultrasound examinations revealed no intra-abdominal pathology. He was fully recovered after one month.

In conclusion, the indispensability of mobile phones comes along with some health risk. Another problem in hospitals is increased risk of cross-contamination from mobile phones if effective disinfection protocols are not enforced (8). Becoming aware of the foreseeable hazards and taking some precautions can reduce mobile phone-related hazards.

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Authors' contributions

Conceived and designed the study: OY, FG. Examination and follow-up of the patient: FB. Wrote the paper: OY. All authors read and approved the final manuscript: Yes

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