Author's response to reviews

Title: Subcutaneous emphysema and pneumomediastinum following cocaine inhalation: A case report

Authors:

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Version: 5 Date: 3 July 2015

Author's response to reviews: see over
Dear Prof Megarbane, Dr. Henlín and Dr. Santini,

Thank you all for your time and consideration of this manuscript, my first case report as a junior medical professional. I appreciate and value all the comments made by each of you and have revised the manuscript based on this advice. Please see my specific responses to each of your reports below:

**Reviewer's report**

**Title:** Subcutaneous emphysema and pneumomediastinum following cocaine inhalation: A case report

**Version:** 3  **Date:** 16 April 2015  
**Reviewer:** Bruno Megarbane

Which of the following following best describes what type of case report this is?: None  
If other, please specify: A well-known and previously reported complication although relatively rare.

Is the case been reported coherently?: Yes  
Is the case report authentic?: Yes  
Is the case report ethical?: Yes  
Is there any missing information that you think must be added before publication?: No  
Is this case worth reporting?: Yes  
Is the case report persuasive?: Yes  
Does the case report have explanatory value?: Yes  
Does the case report have diagnostic value?: Yes

Will the case report make a difference to clinical practice?: No

Whilst the association of subcutaneous emphysema and pneumomediastinum with use of cocaine has been previously reported, it is not that well established in the literature specifically with nasal inhalation. I was working as a general surgical registrar at the time, when I was called by the emergency staff to assess and manage this patient and it was abundantly clear that this was a rare case and the lack of knowledge with regards to the management/investigative process in this situation became apparent amongst the staff working there overnight, including myself. As such, I do believe there is value in this report for emergency workers as well as those working within certain surgical specialties.

Is the anonymity of the patient protected?: Yes  
Comments to authors: The authors report a case of subcutaneous emphysema and pneumomediastinum following cocaine inhalation. The case report is well written and documented with chest X-rays, CT-scan and barium swallow fluoroscopy. This is a well-known and previously reported complication although relatively rare.

No major concern.

Minor remark: Abstract: Please give more precision regarding “He underwent certain investigations and was managed with a period of observation”; delete “extremely” from the expression “extremely rare”
Discussion section:

Please clarify the different mechanisms of intra-thoracic hyper pressure accompanying drug inhalation (i.e. Müller’s maneuver and Valsalva maneuver). 

Added paragraph to further explain this in the discussion section (2nd paragraph)

Please explain the mechanisms of subcutaneous emphysema and pneumomediastinum from an invisible pneumothorax.

The mechanisms of subcutaneous emphysema and pneumomediastinum are explained in the discussion section. I could not find a lot of information on invisible pneumothorax. Also, since the patient had a CT showing no pneumothorax, I was not sure whether to add this in.


Done. I found this article very useful.

Level of interest: An article of limited interest
Quality of written English: Acceptable
Declaration of competing interests: I declare that I have no competing interests
**Reviewer's report**

**Title:** Subcutaneous emphysema and pneumomediastinum following cocaine inhalation: A case report

**Version:** 3  
**Date:** 9 May 2015  
**Reviewer:** Tomás Henlín

**Which of the following best describes what type of case report this is?**
- Unexpected or unusual presentations of a disease

**Do you believe the case report is authentic?**
- Yes, I do. Sometimes it is difficult to find right correlation between symptoms and disease especially when it is so rare - and it is this case - otherwise there is no doubt that can be real.

**Do you have any ethical concerns?**
- No I do not.

**Is the Abstract representative of the case presented?**
- Yes it is

**Does the Introduction explain the relevance of the case to the medical literature?**
- Yes it does

**Does the article report relevant patient information?**
- Yes

**Does the article report relevant physical examination findings?**
- Yes

**Does the article report important dates and times in this case?**
- Yes

**Does the article report the diagnostic assessments?**
- Yes

**Does the article report the types of intervention?**
- Yes

**Does the article report a summary of the clinical course of all follow-up visits?**
- Yes

**If any information is missing from the reporting, please detail it here.**
- 0

**Is the interpretation (discussion and conclusion) well balanced and supported by the case presented?**
- Yes it is

**Does the case represent a useful contribution to the medical literature?**
- Probably yes

**Was written informed consent to publish this case obtained?**
- Yes

**Is the anonymity of the patient protected?**
- Yes it is.

**Additional comments to authors?**
- Last but one sentence at the discussion there is missing i in pneumopericardium word.

  **Thank you for your input and your keen eye. I appreciate that you believe this would probably be a useful addition to the medical literature.**

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Declaration of competing interests:** I declare that I have no competing interests' below.
Reviewer's report

*Title:* Subcutaneous emphysema and pneumomediastinum following cocaine inhalation: A case report

*Version:* 3  
*Date:* 18 May 2015  
*Reviewer:* Mario Santini

Which of the following best describes what type of case report this is?: None

Do you believe the case report is authentic?: yes

Do you have any ethical concerns?: none

Is the Abstract representative of the case presented?: yes

Does the Introduction explain the relevance of the case to the medical literature?: yes

Does the article report relevant patient information?: Yes

Does the article report relevant physical examination findings?: No

With regards to the reporting of relevant physical examination findings, I believe that I have already included this in my case report. The only other relevant physical examination finding would have been Hamman's sign. However, there was no mention at any stage of this finding in his notes and so I cannot definitively comment on whether this sign was present.

Does the article report important dates and times in this case?: No

Does the article report the diagnostic assessments?: No

Does the article report the types of intervention?: No

Does the article report a summary of the clinical course of all follow-up visits?: No

With regards to the timeline, diagnostic assessments, interventions and follow up, these are reported in this manuscript and there is no additional information that could be included. Please see case description section for all the above.

If any information is missing from the reporting, please detail it here.: The authors reported a case of spontaneous pneumomediastinum. Since any evident causes were found and the patient reported a history of cocaine and ecstasy abuse, the authors supposed that drug abuse caused the pneumomediastinum. However, it is only a deduction of the authors that is not supported by radiological and/or pathological findings. In literature, there are many reports describing cases of pneumothorax and/or pneumomediastinum after cocaine abuse. However, in all cases significant radiological lesions including conglomerate masses and bullous disease due to drug abuse are reported. In the present case, the CT did not shown any radiological lesions except the pneumomediastinum. In addition, no pathological findings are reported that may confirm cocaine as cause of pneumomediastinum. Several authors reported the presence of granulomas due to exposition to cocaine in patients with pneumothorax that may support such hypothesis. However, in the present case the patient had a conservative treatment. Probably, in such case the barotrauma due to Valsalva maneuver which is associated to cocaine inhalation may lead to rupture of small blebs and cause...
pneumothorax. However, the present mechanism is well known and it does not add any news for readers.

I have made changes to expand and further discuss the link between cocaine inhalation, barotrauma and pneumomediastinum and subcutaneous emphysema and included another reference. As for other radiological findings associated with cocaine use, the literature does mention this, however there seems to be a distinction made between chronic and intermittent use of cocaine. In this case, the patient had only intermittently used cocaine previously. This could explain why none of the other signs were seen on CT imaging. Also, the literature that looks at the pulmonary sequelae of cocaine use is often in those who smoke “crack cocaine” or freebase cocaine and those who inject it intravenously. As this was not the case with this patient, I am not surprised that there were no additional radiological signs of ‘crack lung’ seen here. It is likely that it was the barotrauma associated with the nasal inhalation of cocaine that caused the subcutaneous emphysema and pneumomediastinum and this is discussed in the paper, but the reason I think it is worth reporting is because there are not many other reports that have found this with nasal inhalation of cocaine as opposed to smoking the drug and which potentially changes the demographic of the patient that this would be applicable to.

Is the interpretation (discussion and conclusion) well balanced and supported by the case presented?:
No

Does the case represent a useful contribution to the medical literature?:
The authors reported a case of spontaneous pneumomediastinum. Since any evident causes were found and the patient reported a history of cocaine and ecstasy abuse, the authors supposed that drug abuse caused the pneumomediastinum. However, it is only a deduction of the authors that is not supported by radiological and/or pathological findings. In literature, there are many reports describing cases of pneumothorax and/or pneumomediastinum after cocaine abuse. However, in all cases significant radiological lesions including conglomerate masses and bullous disease due to drug abuse are reported. In the present case, the CT did not shown any radiological lesions except the pneumomediastinum. In addition, no pathological findings are reported that may confirm cocaine as cause of pneumomediastinum. Several authors reported the presence of granulomas due to exposition to cocaine in patients with pneumothorax that may support such hypothesis. However, in the present case the patient had a conservative treatment.......
Probably, in such case the barotrauma due to Valsalva maneuver which is associated to cocaine inhalation may lead to rupture of small blebs and cause pneumothorax. However, the present mechanism is well known and it does not add any news for readers.

Please see response above

Was written informed consent to publish this case obtained?: No
I do have written consent from this patient to publish this case.

Is the anonymity of the patient protected?:
Yes

Additional comments to authors?:
The authors reported a case of spontaneous pneumomediastinum. Since any evident causes were found and the patient reported a history of cocaine and ecstasy abuse, the authors supposed that drug abuse caused the pneumomediastinum. However, it is only a deduction of the authors that is not supported by radiological and/or pathological findings. In literature, there are many reports describing cases of pneumothorax and/or pneumomediastinum after cocaine abuse. However, in all cases significant radiological lesions including conglomerate masses and bullous disease due to drug abuse are reported. In the present case, the CT did not shown any radiological lesions except the pneumomediastinum.
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Probably, in such case the barotrauma due to Valsalva maneuver which is associated to cocaine inhalation may lead to rupture of small blebs and cause pneumothorax. However, the present mechanism is well known and it does not add any news for readers.

Please see response above

Level of interest: An article of limited interest
Quality of written English: Acceptable
Declaration of competing interests: No conflict of interest