

## PEER REVIEW HISTORY

BMJ Paediatrics Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Foreign Body Ingestion During the COVID Pandemic : A Retrospective Single Centre Review
<b>AUTHORS</b>	Festa, Naomi Tyne Thakkar, Hemanshoo Hewitt, Richard Dhaiban, Manal Muthialu, Nagarajan Cross, Kate De Coppi, Paolo

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Reviewer name: Dr. Shrouk Messahel Institution and Country: Not applicable Competing interests: None
<b>REVIEW RETURNED</b>	04-Mar-2021

<b>GENERAL COMMENTS</b>	<p>Thank you for the work you have done to describe foreign body ingestion which is becoming an increasingly important issue.</p> <p>Please have a quick check again of formatting and spelling and grammar. There were a few minor issues.</p> <p>Please also describe exactly the service that GOS provided during the reconfiguration, so as to understand how the patients arrived at your service. Were they referred into the surgical services by EDs across London? This would suggest a triaging process outside of your hospital, which may have contributed to increased transfer times/ further investigation/ final treatment.</p> <p>It is mentioned in the section regarding 'what the study adds' that the paper will discuss factors associated with the pandemic that leads to foreign body ingestion, and also will add information with regards to public policy and public health campaigns. These issues were really only glossed over in the discussion and if you are including them in what the study adds, I think much more detail needs to be added here, particularly the part about what factors in the pandemic are associated with FB ingestion. It is not mentioned why button batteries constituting the majority of FB ingestions are associated during the pandemic. I do not think it is enough to state that this is because the children are home and are unsupervised in the home, as it is more complex than that. Some children remained in school. There is no information given where the ingestion occurred, so to link it to the home environment and supervision is not accurate. I think the authors would also need to explain in further detail the reasons behind the delays in presentation during the pandemic, and this may be explained by describing how the patients came to being referred to GOS, and a bit more about the service configuration as that was unique to London.</p> <p>Single centre retrospective audits can be helpful in starting conversations and discussions related to a particular issue. I would advise the authors that there is a general move toward collaborative work. It would have strengthened the report to have included</p>
-------------------------	---

	regional data.  Overall, a topical issue. Add more information to the statements made regarding association during the pandemic and delays in treatment. Good luck with the submission.
--	---

<b>REVIEWER</b>	Reviewer name: Dr. Erica Makin Institution and Country: King's College Hospital, Paediatric Surgery Competing interests: None
<b>REVIEW RETURNED</b>	11-Mar-2021

<b>GENERAL COMMENTS</b>	This is a well written manuscript and highlights a worthy public health concern of ingested foreign bodies in particular magnets and button batteries. However, whilst comparing data to COVID era and controls this creates many flaws in the article. The authors admit the change in referral patterns to their institution during the pandemic for emergencies. Although they compare with overall hospital admissions as well, including a proportion of admissions. I query as to whether the reduction in overall hospital admissions during the pandemic is due to a reduction in elective activity and the increase in emergency foreign body admissions is secondary to changing in referral patterns during pandemic particularly as the hospital does not have an Accident and Emergency department. Therefore comparisons made between the 2 time periods becomes skewed. In addition the overall numbers are small as noted by the authors. What is interesting is the increase in operative intervention required - do the authors feel this is due to delayed presentation and therefore lack of progression of FB and this certainly could be attributed to the pandemic and reluctance to seek medical help which is a noteworthy conclusion
-------------------------	--

<b>REVIEWER</b>	Reviewer name: Dr. Conrad Kabali Institution and Country: 2264 Spence Lane, Burlington, Ontario, L7L6L3, Canada Competing interests: None
<b>REVIEW RETURNED</b>	01-Mar-2021

<b>GENERAL COMMENTS</b>	The paper is well written. I have one comment Page 8, line 19: Please include stats for periods prior to 2019. Readers need more evidence to rule out factors other than covid-19 that can explain the increasing trend.
-------------------------	--

### VERSION 1 – AUTHOR RESPONSE

Please see attached word document "Peer Review Comments and Responses" for colour coded responses.

Reviewer: 1

#### Comments to the Author

The paper is well written. I have one comment

Page 8, line 19: Please include stats for periods prior to 2019. Readers need more evidence to rule out factors other than covid-19 that can explain the increasing trend.

Thank you for your feedback. Following your suggestion we have conducted a further data collection for admissions and referrals of foreign body ingestion during 2018 and 2017. Prior to 2019, the trust did not use an electronic patient record system and therefore all data collection was subject to manual coding and conservative referrals were not coded. Consequently, we have compared number of cases and confirmed the unexpected increase of surgical intervention at GOSH during the pandemic.

Year Patients Requiring Surgical Intervention for Foreign Body Ingestion at GOSH  
Pandemic - 2020 18  
Control - 2019 4  
Control - 2018 7  
Control - 2017 7

Reviewer: 2

### **Comments to the Author**

Thank you for the work you have done to describe foreign body ingestion which is becoming an increasingly important issue.

Please have a quick check again of formatting and spelling and grammar. There were a few minor issues.

Many thanks for your feedback and advice. We have addressed the minor spelling and grammar mistakes, thank you for bringing this to our attention.

Please also describe exactly the service that GOS provided during the reconfiguration, so as to understand how the patients arrived at your service. Were they referred into the surgical services by EDs across London? This would suggest a triaging process outside of your hospital, which may have contributed to increased transfer times/ further investigation/ final treatment.

Many thanks for raising this point regarding reconfiguration of services, we have now addressed this in our discussion:

Page 9:

"Emergency Departments and General Practice underwent significant reconfiguration across London during the pandemic, all acute referrals to GOSH both pre and post COVID are via a local Emergency Departments and therefore this does not confound the time to presentation and referral."

Page 10-11:

"During the pandemic, GOSH received an increased number of referring Emergency Departments to facilitate bed capacity across London. During the pandemic four patients in this study were referred from outside the catchment area of controls. To account for this potential confounding variable, these referrals were excluded to improve reliability of results. Following this, an increase in foreign body ingestions was still noted, occurring 2.1 times more frequently during the pandemic in comparison to control group. This suggests that the increase trend in foreign body ingestion is not dependent on altered referring patterns. Furthermore, this study can not account for foreign body ingestion attendances which were not referred to GOSH and managed by general surgical teams during the pandemic. Subsequently the true number may be higher than what is observed in this study."

It is mentioned in the section regarding 'what the study adds' that the paper will discuss factors associated with the pandemic that leads to foreign body ingestion, and also will add information with regards to public policy and public health campaigns. These issues were really only glossed over in the discussion and if you are including them in what the study adds, I think much more detail needs to be added here.

Many thanks in raising our attention to our goals of what this study adds. We have now updated our 'what is already known' and 'what this study adds' section to read as below:

Page 2:

What Is Already Known:

1. Foreign body ingestions, specifically button batteries and magnets, are associated with mortality and morbidity.

2. Cases of button battery ingestions are an increasingly concerning cause of fatality in the paediatric population over the past decade.

3. During the coronavirus pandemic, the home and work environment underwent significant disruption, with many children unable to attend school or nursery and caregivers working from home.

This study aims to explore trends associated with cases of rising foreign body ingestions in the paediatric population and to establish the impact of the coronavirus pandemic on this trend.

#### What This Study Adds:

1. Support reports from other countries depicting an increase of foreign body ingestion in children during the pandemic.

2. Further evidence supporting the literature depicting an increase in morbidity associated with foreign body ingestion.

3. Weight to support public health campaigns aimed to tackle paediatric foreign body ingestion.

More information is required about what factors in the pandemic are associated with FB ingestion. It is not mentioned why button batteries constituting the majority of FB ingestions are associated during the pandemic. I do not think it is enough to state that this is because the children are home and are unsupervised in the home, as it is more complex than that. Some children remained in school. There is no information given where the ingestion occurred, so to link it to the home environment and supervision is not accurate.

Many thanks for highlighting the importance of further exploring the association between foreign body ingestion and the COVID pandemic. We have now updated our discussion to read as below:

Page 8:

"The association between the COVID pandemic and an increased trend in paediatric foreign body ingestion has been witnessed internationally. In Italy, a study reviewed attendances to Emergency Department due to foreign body ingestion from February to April 2020 compared to the 4 years prior. A statistically significant increase in button battery ingestions ( $P < 0.001$ ) was noted during the pandemic [16]. Further, Sapountzi<sup>17</sup> investigated Ear Nose and Throat (ENT) emergency admissions during the COVID pandemic and found that whilst attendances for ENT symptoms showed a statistically significant reduction, attendances for foreign body ingestions continued to remain high. The findings from this study echo this trend and thus highlight the importance of raising awareness to increasing rates of foreign body ingestion."

Page 10:

"The relationship between the COVID pandemic and increased foreign body ingestion is indirect but should be explored. Households during the COVID pandemic experienced significant disruption. UNESCO state that during the COVID pandemic, 1.37 billion students globally, have been unable to attend school resulting in an abrupt change family lifestyle [21]. Pizzol<sup>16</sup> studied 101 cases of foreign body ingestion and found nearly all happened at home. The relationship between foreign body ingestion and the home environment has been previously explored. Litovitz<sup>22</sup> reviewed 8648 cases of battery ingestions in the paediatric population and found 61.8% of battery ingestions were obtained from household products. They also highlighted that manufacturers should redesign products to secure the battery compartment. Supporting these findings, this present study revealed that many foreign body ingestions such as magnets were associated with toys of an older sibling at home. Therefore, the home environment as well as the manufacture of household products and toys should cautiously be considered as an indirect factor contributing to the trend between the COVID pandemic and foreign body ingestions."

I think the authors would also need to explain in further detail the reasons behind the delays in presentation during the pandemic, and this may be explained by describing how the patients came to being referred to GOS, and a bit more about the service configuration as that was unique to London.

Many thanks for raising our attention to a greater discussion point regarding reasons behind delays in presentation during the pandemic. Please see our updated discussion below:

Page 9:

"During the COVID pandemic, a greater range in time to presentation with foreign body ingestion (0-56 days) was observed compared to controls where all patients in this study were found to have presented immediately. When considering time to presentation, this study reviewed time, in days, to presentation and referral of foreign body ingestion to GOSH as one entity. This therefore excluded time to transfer and time to surgical intervention as not all patients required intervention. Whilst Emergency Departments and General Practice underwent significant reconfiguration across London during the pandemic, all acute referrals to GOSH both pre and post COVID are via local Emergency Departments and therefore this does not confound the time to presentation and referral. In support of the trend witnessed in this study regarding delayed time to presentation with foreign body ingestion, a recent study by Yu18 found a longer duration from ingestion to consultation and increased likelihood of requiring operative management for retrieval in adults with foreign body ingestion. This led to increased rates of hospitalisation during the pandemic compared to controls (15/25 vs 5/25;  $p < 0.005$ ). Whilst these results are based on an adult demographic, reducing generalisability of results, it reinforces our findings and raises a concerning picture of delayed presentation and increased morbidity in both paediatric and adult populations.

There are multiple aspects to consider when exploring factors associated with delay in presentation and referral during the pandemic. Delayed presentation may be associated with an unwitnessed ingestion in the context of dramatically affected health seeking behaviours during the COVID pandemic. Arshad19 conducted a cross-sectional study in Pakistan to explore health seeking behaviour during the COVID pandemic and found a significant increase in self-medication and decrease in hospital attendances for a variety of conditions, including pneumonia, angina and cholera. Consequently, the impact of altered health seeking behaviours and avoidance of hospitals during the pandemic, should be considered as a potential factor contributing to delayed presentation with foreign body ingestion [3,4]. Alternatively, incorrect diagnosis on initial presentation to medical teams may also contribute to delayed time to referral. This factor should be considered in the context of health care providers undergoing significant reconfiguration or using novel modalities for consultations. This further highlights the importance of raising awareness of current increasing trends of foreign body ingestion. "

Single centre retrospective audits can be helpful in starting conversations and discussions related to a particular issue. I would advise the authors that there is a general move toward collaborative work. It would have strengthened the report to have included regional data.

We hope this paper will instigate future research and collaborative work with regional and national centres on this concerning topic of noted increase trends in foreign body ingestion.

Overall, a topical issue. Add more information to the statements made regarding association during the pandemic and delays in treatment. Good luck with the submission.

Reviewer: 3

#### **Comments to the Author**

This is a well written manuscript and highlights a worthy public health concern of ingested foreign bodies in particular magnets and button batteries. However, whilst comparing data to COVID era and controls this creates many flaws in the article. The authors admit the change in referral patterns to their institution during the pandemic for emergencies. Although they compare with overall hospital admissions as well, including a proportion of admissions. I query as to whether the reduction in overall hospital admissions during the pandemic is due to a reduction in elective activity and the increase in emergency foreign body admissions is secondary to changing in referral patterns during pandemic particularly as

the hospital does not have an Accident and Emergency department. Therefore comparisons made between the 2 time periods becomes skewed. In addition the overall numbers are small as noted by the authors.

Many thanks for raising this discussion point which we have now updated within our discussion of weakness of the study. Please see updated discussion below:

Page 10-11:

“When considering weaknesses of this study the reconfiguration of services to GOSH must be considered. During the pandemic GOSH received an increased number of referring Emergency Departments to facilitate bed capacity across London. During the pandemic four patients in this study were referred from outside the catchment area of controls. To account for this potential confounding variable, these referrals were excluded to improve reliability of results. Following this, an increase in foreign body ingestions was still noted, occurring 2.1 times more frequently during the pandemic in comparison to control group. This suggests that the increase trend in foreign body ingestion is not dependent on altered referring patterns. Furthermore, this study can not account for foreign body ingestion attendances which were not referred to GOSH and managed by general surgical teams during the pandemic. Subsequently the true number may be higher than what is observed in this study. Secondly, during the pandemic, a reduction in total number of hospital admissions was noted at GOSH yet the number of foreign body ingestions remained significantly high. However, it is important to acknowledge that much of GOSH’s elective work was suspended during the pandemic thus limiting the generalisability of this data. As a result, this study has focused on foreign body ingestion independently of total hospital admissions. Finally, it is essential to note the relatively small sample size of patients in this study. Consequently, future research should consider a national data collection on foreign body ingestion during the COVID pandemic to improve generalisability of results.”

What is interesting is the increase in operative intervention required - do the authors feel this is due to delayed presentation and therefore lack of progression of FB and this certainly could be attributed to the pandemic and reluctance to seek medical help which is a noteworthy conclusion

Many thanks for highlighting a greater discussion point regarding reasons behind delays in presentation and increased operative management during the pandemic. Please see our updated discussion below:

Page 9-10:

“During the COVID pandemic, a greater range in time to presentation with foreign body ingestion (0-56 days) was observed compared to controls where all patients in this study were found to have presented immediately. When considering time to presentation, this study reviewed time, in days, to presentation and referral of foreign body ingestion to GOSH as one entity. This therefore excluded time to transfer and time to surgical intervention as not all patients required intervention. Whilst Emergency Departments and General Practice underwent significant reconfiguration across London during the pandemic, all acute referrals to GOSH both pre and post COVID are via local Emergency Departments and therefore this does not confound the time to presentation and referral. In support of the trend witnessed in this study regarding delayed time to presentation with foreign body ingestion, a recent study by Yu18 found a longer duration from ingestion to consultation and increased likelihood of requiring operative management for retrieval in adults with foreign body ingestion. This led to increased rates of hospitalisation during the pandemic compared to controls (15/25 vs 5/25;  $p < 0.005$ ). Whilst these results are based on an adult demographic, reducing generalisability of results, it reinforces our findings and raises a concerning picture of delayed presentation and increased morbidity in both paediatric and adult populations.

There are multiple aspects to consider when exploring factors associated with delay in presentation and referral during the pandemic. Delayed presentation may be associated with an unwitnessed ingestion in the context of dramatically affected health seeking behaviours during the COVID pandemic. Arshad19 conducted a cross-sectional study in Pakistan to explore health seeking behaviour during the COVID pandemic and found a significant increase in self-medication and decrease in hospital attendances for a variety of conditions, including pneumonia, angina and cholera. Consequently, the impact of altered

health seeking behaviours and avoidance of hospitals during the pandemic, should be considered as a potential factor contributing to delayed presentation with foreign body ingestion [3,4]. Alternatively, incorrect diagnosis on initial presentation to medical teams may also contribute to delayed time to referral. This factor should be considered in the context of health care providers undergoing significant reconfiguration or using novel modalities for consultations. This further highlights the importance of raising awareness of current increasing trends of foreign body ingestion.

This study has observed an increase in operative management for foreign body ingestion during the COVID pandemic ( $p=0.12$ ). It is possible that this increase may be directly associated with an initial delay in presentation and referral. Alternatively, increase in surgical management may be associated with type of foreign body ingested such as button batteries and magnets which due to high morbidity rates, require close surgical attention. Given that button battery ingestion has become an increasingly concerning cause of fatality in paediatrics [20], public health campaigns should continue to raise awareness of the importance of immediate management and risks associated with foreign body ingestions."

Editor(s)' Comments to Author (if any):

Associate Editor

Comments to the Author:

As per reviewer 3, please can you reconsider the relationship between the pandemic and your findings. Whilst increasing foreign body ingestion in children is clearly concerning, you do not make a convincing argument and present no data for how this is actually relate din any way to the covid pandemic other than there was a change in referral pattern during this time period. Specifically you have no data to support an actual increase in incidence since this is not a population based study. If you wish to maintain the covid aspect of this paper then please provide some more convincing data on how and why there has been such an impact.

Many thanks for highlighting the importance of discussing the potential relationship between foreign body ingestion and the COVID pandemic. We understand that initially we alluded to changes in social situations contributing to foreign body ingestion but did not fully explore this within the discussion. Please see the updated discussion below:

Page 8:

"The association between the COVID pandemic and an increased trend in paediatric foreign body ingestion has been witnessed internationally. In Italy, a study reviewed attendances to Emergency Department due to foreign body ingestion from February to April 2020 compared to the 4 years prior. A statistically significant increase in button battery ingestions ( $P<0.001$ ) was noted during the pandemic [16]. Further, Sapountzi17 investigated Ear Nose and Throat (ENT) emergency admissions during the COVID pandemic and found that whilst attendances for ENT symptoms showed a statistically significant reduction, attendances for foreign body ingestions continued to remain high. The findings from this study echo this trend and thus highlight the importance of raising awareness to increasing rates of foreign body ingestion."

Page 10:

"The relationship between the COVID pandemic and increased foreign body ingestion is indirect but should be explored. Households during the COVID pandemic experienced significant disruption. UNESCO state that during the COVID pandemic, 1.37 billion students globally, have been unable to attend school resulting in an abrupt change family lifestyle [21]. Pizzol16 studied 101 cases of foreign body ingestion and found nearly all happened at home. The relationship between foreign body ingestion and the home environment has been previously explored. Litovitz22 reviewed 8648 cases of battery ingestions in the paediatric population and found 61.8% of battery ingestions were obtained from household products. They also highlighted that manufacturers should redesign products to secure the battery compartment. Supporting these findings, this present study revealed that many foreign body ingestions such as magnets were associated with toys of an older sibling at home. Therefore, the home environment as well as the manufacture of household products and toys should cautiously be considered as an indirect factor

contributing to the trend between the COVID pandemic and foreign body ingestions.”

Many thanks for also highlighting the importance fully describing the referral patterns during this period. We have now updated the discussion to read as below:

Page 8:

“Emergency Departments and General Practice underwent significant reconfiguration across London during the pandemic, all acute referrals to GOSH both pre and post COVID are via local Emergency Departments and therefore this does not confound the time to presentation and referral.”

Page 10-11:

“During the pandemic GOSH received an increased number of referring Emergency Departments to facilitate bed capacity across London. During the pandemic four patients in this study were referred from outside the catchment area of controls. To account for this potential confounding variable, these referrals were excluded to improve reliability of results. Following this, an increase in foreign body ingestions was still noted, occurring 2.1 times more frequently during the pandemic in comparison to control group. This suggests that the increase trend in foreign body ingestion is not dependent on altered referring patterns. Furthermore, this study can not account for foreign body ingestion attendances which were not referred to GOSH and managed by general surgical teams during the pandemic. Subsequently the true number may be higher than what is observed in this study. Secondly, during the pandemic, a reduction in total number of hospital admissions was noted at GOSH yet the number of foreign body ingestions remained significantly high. However, it is important to acknowledge that much of GOSH’s elective work was suspended during the pandemic thus limiting the generalisability of this data. As a result, this study has focused on foreign body ingestion independently of total hospital admissions.”

Many thanks for highlighting the importance of conducting a population based study. We endeavour to raise awareness of this concerning trend and to instigate further commentary both regionally and nationally on foreign body ingestion both during the COVID pandemic and prior to.

What is already known section: please provide 3 statement about what is already known, not what this study will add

What this study adds: please provide 3 statements about the data that this study actually adds. Not what this study will add and not things that might follow-up on from this study. These statements should be supported by actual data from your study. Your study does not provide any data that support the statements made at present.

Many thanks for raising this incorrect formatting of response to our attention. We have now updated and adapted our ‘what is already known and what this study will add section’ to read as below:

Page 2:

“What Is Already Known:

1. Foreign body ingestions, specifically button batteries and magnets, are associated with mortality and morbidity.
2. Cases of button battery ingestions are an increasingly concerning cause of fatality in the paediatric population over the past decade.
3. During the coronavirus pandemic, the home and work environment underwent significant disruption, with many children unable to attend school or nursery and caregivers working from home. This study aims to explore trends associated with cases of rising foreign body ingestions in the paediatric population and to establish the impact of the coronavirus pandemic on this trend.

What This Study Adds:

1. Support reports from other countries depicting an increase of foreign body ingestion in children during the pandemic.



2. Further evidence supporting the literature depicting an increase in morbidity associated with foreign body ingestion.
3. Weight to support public health campaigns aimed to tackle paediatric foreign body ingestion.”

Editor in Chief

You need to be more cautious in your interpretation. Your results MAY represent an increase. The main point of your paper is to highlight the possibility that there is an increase. Respond in full to the reviewers and Associate Editor

Many thanks for your feedback. We have now adapted our discussion to highlight that there may be an increased trend and have taken this opportunity further discussed potentially confounding variables such as reconfiguration of referral services during the coronavirus pandemic. We have also highlighted that the increased trend noted in foreign body ingestion may be indirectly associated with lifestyle changes during the coronavirus pandemic, but that this association is not causal or direct. We hope that this study will ignite further discussion of this topic with larger population sizes both regionally and nationally.

### VERSION 2 – REVIEW

<b>REVIEWER</b>	Reviewer name: Dr. Shrouk Messahel Institution and Country: Not applicable Competing interests: None
<b>REVIEW RETURNED</b>	07-Jun-2021

<b>GENERAL COMMENTS</b>	Thank you for the revisions to this paper. the only thing I would add is that it is still not clear to the reader what the configured services were in London at the time of the study and whether this represents all children attending with magnet ingestion or only the ones referred to the authors place of work. More clarity around this please.
-------------------------	--

<b>REVIEWER</b>	Reviewer name: Dr. Conrad Kabali Institution and Country: 2264 Spence Lane, Burlington, Ontario, L7L6L3, Canada Competing interests: None
<b>REVIEW RETURNED</b>	16-May-2021

<b>GENERAL COMMENTS</b>	The comment has been addressed. No further comments
-------------------------	---

### VERSION 2 – AUTHOR RESPONSE

Editor in Chief Comments to Author :

Discussion needs shortening and page 11 lines 3-5 delete "This study has observed an increase in operative management for foreign body ingestion during the COVID pandemic (p=0.12)". This is a result and contradicts what you say in the Results. This paragraph needs rephrasing. The first three sentences MUST be changed. You MUST be cautious in your interpretation of your results.  
Discussion avoid P values

Many thanks for your comments. The discussion has been shortened as recommended. We have removed the comment and results regarding increase in operative management in the discussion as advised and removed p values.

Associate Editor

Comments to the Author:

Please remove the sentence starting "This study aims to explore.... " after the what is already known section.

What this study adds: These should read as stand alone grammatically correct but succinct sentences. At present they do not. E.g point 1: "These data support reports from other countries.....". Point 2: I'm not sure your data provide evidence supporting an increase in morbidity with foreign body ingestion. You report higher number of button batteries and magnets which in themselves are more likely to require surgery than other foreign bodies. The morbidity is related to the type of foreign body, not foreign bodies overall.

Abstract>Conclusion - the initial sentence does not make sense. Suggest: These findings raise concerns in terms of both increased frequency of foreign body ingestion during the COVID pandemic and highlight the potential for significant injury following ingestion of button batteries and strong magnets.

You have only partially addressed the issue raised by one of the reviewers about reconfiguration of services in London during the pandemic. You state there was reconfiguration but them seem to suggest that the referral pathways were the same pre/post pandemic. Can you please clarify this and address the reviewer comment as well.

I appreciate you have added significantly to the discussion following reviewer comments but this is now very long. Can you please shorten it significantly. A shorter paper is more likely to grab the reader and have impact.

Thank you for your comments. We have removed the sentence as advised and have updated the points in "What this study adds" as per your suggestions. We have clarified the conclusion in the abstract.

"What This Study Adds:

1. This study demonstrates an increase in paediatric foreign body ingestions during the COVID pandemic in North London.
2. This supports literature from other countries reporting an increase in foreign body ingestion in children during the pandemic.
3. There was an increase in the percentage of button battery and magnets ingested which is of significant concern for potential morbidity and mortality."

"Abstract

Conclusion:

These findings raise concerns of both increased frequency of foreign body ingestion during the COVID pandemic and the nature of ingested foreign bodies linked with significant morbidity. This may relate to the disruption of home and work environments and carries implications for ongoing restrictions. Further awareness of the danger of foreign body ingestion, especially batteries and magnets is necessary."

Regarding the reconfiguration of services in London during COVID we have removed the paragraph from the introduction which was confusing and clarified this more clearly in the discussion.

"Hospitalisation in the paediatric population has faced different challenges in comparison to the adult population during the COVID pandemic. There has been a significant reduction in paediatric admissions across European countries during the coronavirus pandemic,[9,10]. As part of North Central London's regional response to COVID, paediatric patients were redirected to GOSH directly from local Emergency Departments to provide capacity for local adult hospitalisation. The catchment area for referral to GOSH however remained the same and we would not expect foreign body ingestions to have be affected by this change, as they would ordinarily be referred to our centre at time of presentation for management even prior to COVID provision restructuring. During the COVID period a notable increase of more than double the number of foreign body ingestions was observed even considering the small number of additional out of area referrals during this time."

"This study cannot account for foreign body ingestions in North London which were not referred to GOSH during the pandemic. Subsequently the true number may be even higher than we observed however, this number is likely to be small as both pre- and during COVID these patients would usually be referred to our tertiary centre. It is also important to note the relatively small sample size of patients in this study. Future research should consider a national data collection on foreign body ingestion during the COVID pandemic to improve generalisability of results."

We have also significantly shortened the discussion focusing on the primary outcomes from our study. Many thanks for your advice and input.

Reviewer: 1

Dr. Conrad Kabali

**Comments to the Author**

The comment has been addressed. No further comments

Thank you.

Reviewer: 2

Dr. Shrouk Messahel

**Comments to the Author**

Thank you for the revisions to this paper. the only thing I would add is that it is still not clear to the reader what the configured services were in London at the time of the study and whether this represents all children attending with magnet ingestion or only the ones referred to the authors place of work. More clarity around this please.

Thank you for this comments and apologies for the confusion. We have removed the paragraph from the introduction regarding London configuration which was confusing and have instead commented and clarified this more clearly in the discussion.

"Hospitalisation in the paediatric population has faced different challenges in comparison to the adult population during the COVID pandemic. There has been a significant reduction in paediatric admissions across European countries during the coronavirus pandemic,[9,10]. As part of North Central London's regional response to COVID, paediatric patients were redirected to GOSH directly from local Emergency Departments to provide capacity for local adult hospitalisation. The catchment area for referral to GOSH however remained the same and we would not expect foreign body ingestions to have been affected by this change, as they would ordinarily be referred to our centre at time of presentation for management even prior to COVID provision restructuring. During the COVID period a notable increase of more than double the number of foreign body ingestions was observed even considering the small number of additional out of area referrals during this time."

"This study cannot account for foreign body ingestions in North London which were not referred to GOSH during the pandemic. Subsequently the true number may be even higher than we observed however, this number is likely to be small as both pre- and during COVID these patients would usually be referred to our tertiary centre. It is also important to note the relatively small sample size of patients in this study. Future research should consider a national data collection on foreign body ingestion during the COVID pandemic to improve generalisability of results."