

# Mortality After Buttock Fat Grafting: Analysis of the American Association for Accreditation of the Ambulatory Surgery Facilities' Patient Database



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## BACKGROUND

## RESULTS

- In 2016, 18,489 cases of buttock augmentation with fat grafting (BFG) were performed by members of the American Society of Plastic Surgeons (ASPS); an increase of 26% from 2015.<sup>1</sup>
- Commonly performed in outpatients, concerns have arisen over case reports of death in association with BFG.
- A 2017 report from the Aesthetic Surgery Education and Research Foundation Task Force found that, of 198,857 reported BFG cases, there were 32 fatalities from pulmonary fat emboli and 103 occurrences of non-fatal fat emboli.<sup>2</sup> However, there is limited demographic detail provided.
- The present study aims to identify deaths associated with BFG, in the first detailed analysis of the American Association for Accreditation of the Ambulatory Surgery Facilities' (AAAASF) patient database.

No.	Demographics	PMH and Medications	Fat volume	Circumstances	Post mortem (PMI)/other report
1	28 year-old Caucasian female	-No PMH -Multivitamins -FH of early MI and stroke (not disclosed to surgical team)	800cc each buttock	Cardiac arrest intraoperatively; death <24 hours	PM report unavailable. On echocardiogram, thrombus located in the right atrium. Clinical diagnosis of pulmonary embolus
2	48 year-old Black female; non-smoker.	-Hypertension, iron-deficiency anemia -Metoprolol, iron supplements, Zantac, Hydrochlorothiazide	650cc each buttock 14G cannula	3.5 hour surgery – uncomplicated. Respiratory distress in recovery post-operatively; subsequent cardiac arrest and death <24 hours.	PM report unavailable
3	36 year-old Caucasian female; BMI 34, non-smoker.	-Type two diabetes, cholecystectomy -Sitagliptin	760cc each buttock 4mm cannula	Respiratory arrest intra-operatively during BFG	PM report: Death due to paradoxical thromboemboli of the internal carotid arteries due to phlebotrombosis
4	44 year-old Caucasian female	No details available	Not available	Death three-days post-operatively at home	No PM examination performed
5	43 year-old Caucasian female; non-smoker, alcohol excess	-Hypertension, gender reassignment surgery, anxiety -Metoprolol, Lisinopril	750cc each buttock 15G cannula	First surgery cancelled due to dehydration and labile BP. Advised to cease alcohol, hydrate and comply with BP meds. Second surgery uneventful - died 24 <sup>th</sup> post-operative day	PM report: Found unresponsive at home with empty prescription bottles and compressed air cans

## METHODS

## DISCUSSION

- AAAASF is a national accrediting organization for outpatient surgical facilities, requiring participants to provide annual data on surgical complications and sample elective patients.
- Retrospective analysis of the AAAASF patient database was performed between 2001-2015.
- Patients who died after undergoing BFG were identified with procedural and complication codes.

- There is growing concern over mortality occurring in association with BFG. A retrospective study in Mexico and Colombia found that there were 22 deaths attributed to BFG. Of these, fifteen occurred at the time of lipoinjection, while eight occurred post-operatively, but within 24 hours. Moreover, in 21 of these cases, the cause of death was fat embolism, as determined by autopsy.<sup>3</sup>
- The present study provides further detail on five cases of BFG-associated mortality and interestingly, none were definitely due to fat embolus.
- Accrediting agencies provide a useful source of information on morbidity and mortality in association with outpatient plastic surgery procedures.

### ACKNOWLEDGEMENTS

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### REFERENCES

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## CONCLUSION

Here we describe five deaths occurring in the United States after buttock fat grafting; none were attributed to fat embolus. Further research is needed to understand the causative mechanisms underlying death in these cases.

