

## Introduction

Tumor lysis syndrome (TLS) is an oncologic emergency that occurs when many cancer cells die within a short period, releasing their contents into the blood, which is rich in potassium, phosphorus, and uric acid. This metabolic derangement can lead to acute renal impairment, arrhythmias, seizures, and death. Most commonly, TLS is associated with hematologic malignancies, however, a variety of solid tumors have been rarely associated with the syndrome. TLS has an extremely poor prognosis when it is not recognized or treated early. We report a case of spontaneous TLS of a patient with metastatic melanoma.

## Patient Presentation

- **HPI:** A 43 y.o. male presents to the ED due to generalized weakness, fatigue, poor oral intake, and confusion for 2 days.
- **PMH:** Recent dx of malignant melanoma (IIIc) with disease progression with metastases to scalp and sacrum, s/p pelvic radiation and targeted therapy which was started 7 months PTA and recently discontinued d/t AKI.
- **Physical Exam**
  - VS: Afebrile, tachycardic, normotensive, with SpO2 94% on RA
  - Gen: AAO x 2, ill-appearing, somnolent but arousable
  - Cardio: tachycardic and regular, no LE edema
  - Respi: CTA b/l w/o increased WOD
  - GI: Protuberant and firm abdomen, NTTP
  - Neuro: Following commands but slow to respond

## Lab Values

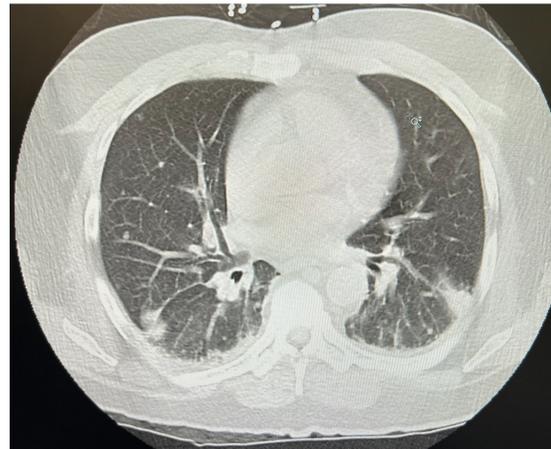
132	91	99	112
5.9	19	10.21	

Uric acid: 19.1  
CPK: 599  
Lactate: 2.3  
TSH wnl  
Ammonia 47

17.1	10.3	280
	30.8	

EKG with sinus tachycardia, no ST-T abnormalities

## Imaging



CT chest, abdomen, and pelvis

## Hospital Course

- Patient was admitted to medicine floor, oncology and nephrology consulted
- Treatment -> IVF, insulin + bicarbonate given
- Follow up labs:
  - UCr:272.5, UNa: 31, FeNA:0.9% pre-renal
  - Immune panel ANCA, ANA, C3, C4 unremarkable
- Taken together: imaging + laboratory findings -> spontaneous TLS dx was made
- Patient was unable to receive rasburicase due to unknown G6PD status
- Discussed with family who decided to transition patient to comfort based care with hospice support, patient died on day 3 of his hospitalization.

## Discussion

- Although advanced melanoma treated with checkpoint inhibitors and targeted therapy prolongs progression-free and overall survival, but attention must also be given to the potentially life-threatening events such as TLS
- TLS is common in hematologic malignancies; however, some solid tumors have been rarely associated with the syndrome (high tumor cell proliferation rate, large tumor burden, and/or development of rapidly metastatic disease)
- TLS has an extremely poor prognosis when it is not recognized or treated early
- There is a Risk stratification criteria for the prevention and management of TLS that provides recommendations for therapy according to the estimated risk
- Prophylactic treatment includes hydration prior to treatment and/or alkalinization of the urine as well as hypouricemic agents such as allopurinol, rasburicase, and febuxostat
- In our case, the patient did not receive prophylactic treatment and had not had laboratory studies to investigate for the possibility of TLS when his renal function was noted to be deteriorating

## Take Home Points

- TLS is an oncologic emergency associated with metabolic derangement which can lead to acute renal impairment, arrhythmias, seizures, and death
- Solid tumors also can develop TLS
- The most important treatment for TLS is prevention, which include aggressive hydration, control of hyperuricemia, and close monitoring of electrolyte abnormalities
- Patients should be identified early on as being at low, intermediate, or high risk of developing TLS so that prophylactic measures can be taken.

## References

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