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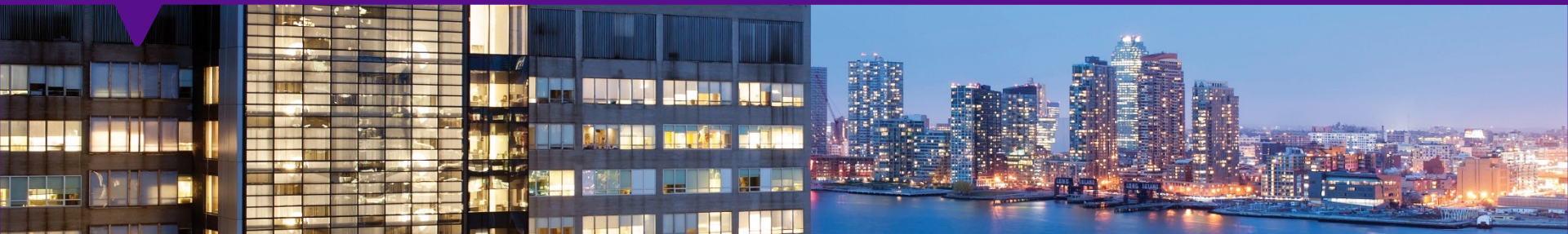
Department of Orthopedic Surgery

A CHANGE IN ACHILLES RUPTURE RATES DURING THE COVID-19 PANDEMIC

Andrew S Bi, MD, Mohammad T Azam, BS, James J Butler, MB BCh, Michael J Alaia, MD, Laith M. Jazrawi, MD, Guillem Gonzalez-Lomas, MD, John G. Kennedy, MD, FRCS



Disclosures

- John G. Kennedy received research support from the Ohnell Family Foundation and Mr. and Mrs. Michael J. Levitt.
- John G Kennedy is a consultant for Arteriocyte, Arthrex and In2Bones

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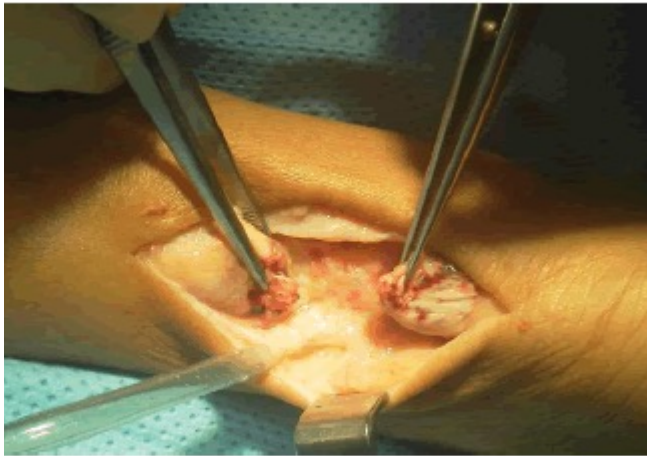
Background

- The COVID-19 global pandemic resulted in lockdowns, quarantines, and increased sedentary behaviors.
- Returning to physical activity after extended periods of inactivity, leads to increased rates of musculoskeletal injuries[1]
- Concern for increased risk of acute Achilles tendon ruptures (AATR) in both the athletic and general population



Verjee, 2019, Imaging in Medicine

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Purpose

The purpose of this study was to investigate the rates of AATR requiring repair in a single academic center in NYC, and to assess if a corollary exists in the NFL.

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Methods

- A retrospective chart review was conducted to identify the total number of Achilles acute primary repair surgeries performed from years 2017 to 2021 at a single academic center.
- NFL data was obtained from publicly available sites according to previously validated studies.
- Chi-square analysis was conducted between the proportion of Achilles surgeries performed in 2021 and 2017-2020 at a single academic center.
- Chi-square analysis was performed in a similar manner, however between each year and 2021.

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Results

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Patient Demographics

- 588 patients
- Mean age of 43.2 ± 14.4 years old
- Male = 445 (75.7%)

	2021	2020	2019	2018	2017	Total
Number of Achilles Repairs	138 (23.5%)	86 (14.6%)	130 (22.1%)	110 (18.7%)	124 (21.1%)	588
Avg Age	40.8±14.6	45.1±14.1	43.6±13.5	44.1±14.8	43.3±14.8	
Avg BMI	28.0±5.7	29.3±6.7	29.2±6.6	28.5±5.6	28.2±5.3	
Males	106	64	100	83	92	445 (75.7%)
Females	32	22	30	27	32	143 (24.3%)
Laterality (Right	73	43	64	59	58	297
Left)	65	43	66	51	66	291

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8.9% increase in AATR incidence from 2020 to 2021

Year	Incidence
2017	21.1%
2018	18.7%
2019	22.1%
2020	**14.6%**
2021	**23.5%**

2020 → 2021: **8.9%**

2017-2019 → 2021: **2.9%**

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10.5% increase in AATR incidence from 2019-2020 to 2020-2021 NFL season

Season	Incidence
2019-2020	**21.2%**
2020-2021	**32.7%**
2021-2022	46.2%

2019-2020 → **10.5%** → 2020-2021

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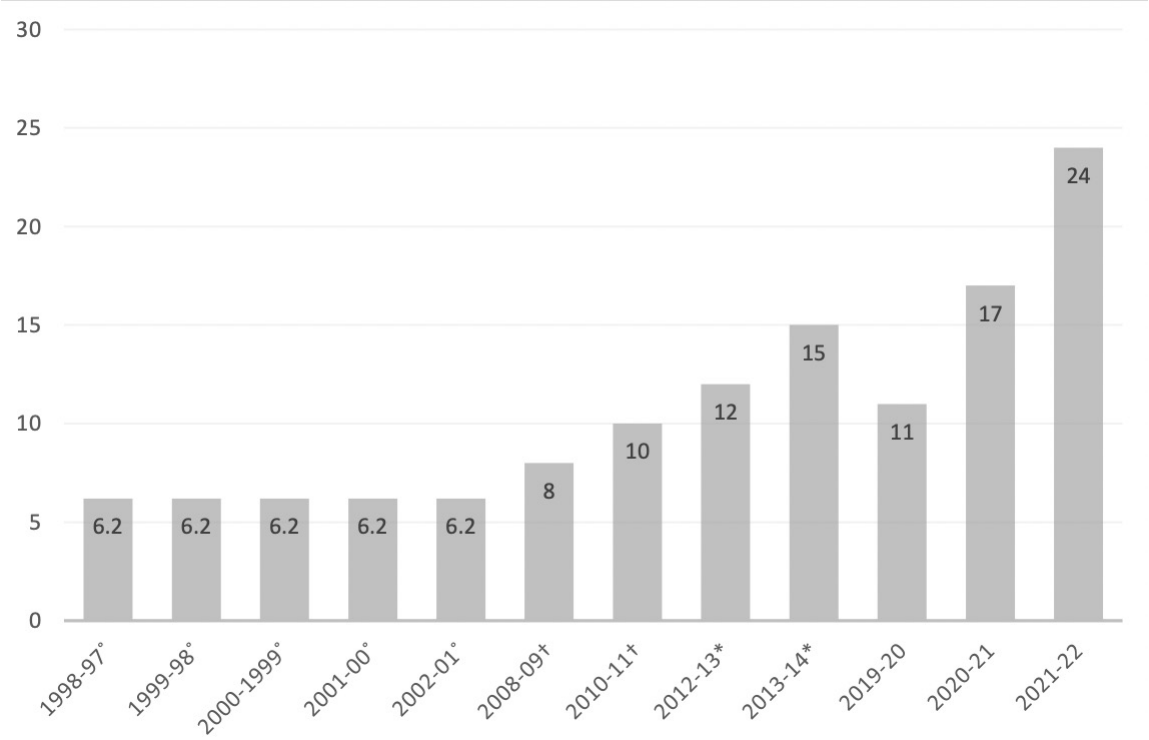
Increase in AATR incidence in NFL seasons



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Limitations

- By using CPT codes for acute Achilles repairs, we are simply estimating the rate of AATR, as not all AATR are indicated for surgery or end up having the procedure done at our institution.
- Many patients moved out of the city during the pandemic, in particular 2020, which may contribute to lower rates of surgery within our institution.
- AATR are also pathologies that can be reasonably treated nonoperatively, and thus less aggressive operative management of these injuries may have occurred during 2020 when parts of the year were cancelling elective surgeries due to COVID.
- In regard to the NFL data, our study is limited that for all seasons prior to the 2019-2020 season, we used data from prior published studies, and thus the data is only as accurate as those original publications.

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- Achilles tendon ruptures occurred at an increased rate in 2021 following a period of inactivity and sedentary behavior induced by the COVID pandemic

- This information provides important information for medical practitioners and athletic trainers when counselling patients and athletes on return to sport in this current pandemic, especially with possible future lockdowns or quarantines

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References

1. Shamrock AG, Varacallo M. Achilles Tendon Rupture. 2022 Sep 4. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan–. PMID: 28613594.

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Thank You