Trigger Digit and BMI

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Abstract

From 1992 to 1998, 1630 patients with trigger digits were studied. The ratio of female to male patients was 6 : 1. The average age of the patients was 51.8 years. The thumb was the most frequently involved digit. The index and little fingers were relatively spared. More than two trigger digits in one hand or more than four trigger digits in both hands were found only in patients whose body mass index (BMI) were obese and morbidly obese.

Key word : Trigger Digit, BMI

Trigger digit is one of the most common tenosynovitis. It has been attributed to rheumatoid arthritis[1,2], diabetes[3], carpal tunnel syndrome [4,5], de Quervain's disease[6], gout[5], and congenital or developmental deformity[7]. BMI, which has been described by Bray[8] and the Surgeon General[9], has been used to quantify obesity. It is defined as weight in kilograms divided by the square of the height in meters (wt/ht^2) and classified into five types. A BMI equal to or less than 21 is considered slender. Medium ranges from a BMI of 21.01 to 24.99 and overweight from a BMI of 25.00 to 29.99. A BMI from 30.00 to 34.99 is termed obese and anything equal to or greater than 35.00 is considered morbidly obese. To our knowledge, no reference has been established to connect trigger digit and BMI. The purpose of this study was to investigate the clinical behavior of trigger digit and BMI.

MATERIAL AND METHOD

From 1992 to 1998, 1630 patients were diagnosed with trigger digits at the out patient clinic, Department of Orthopaedics, Ramathibodi Hospital. The age, sex, weight, height and number of trigger digits were recorded. BMI was calculated in all cases. Diabetic mellitus, carpal tunnel syndrome, de Quervain's disease, rheumatoid, gout and congenital or developmental deformity were exclusive criteria of the patients.

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Table 1. The mean and variability of age, weight, height and BMI.

Variables	Mean	Variability		
		Min	Max	SD
Age (year)	51.882	17.00	85.00	10.753
Weight (kg)	59.036	36.20	101.00	9.433
Height (cm)	153.8	137.0	182.0	6.60
BMI	24.935	15.647	39.104	3.545

Table 2. The number and location of trigger digit.

Location of trigger digit	Number (digit)	Per cent
right hand		
thumb	571	27.7
index finger	68	3.3
middle finger	306	14.9
ring finger	154	7.5
little finger	25	1.3
left hand		
thumb	450	21.9
index finger	81	3.9
middle finger	261	12.7
ring finger	127	6.2
little finger	13	0.6
	2056	100

RESULTS

Of the 1630 patients, 239 were men. The mean and variability of age, weight, height and BMI are shown in Table 1. The number and locations of trigger digits are also shown in Table 2. The right thumb was the most common involved digit (27.7%).

The number of trigger digits and BMI are shown in Table 3. More than two trigger digits in one affected hand was found only in obese and morbidly obese groups. On the right hand, four and five trigger digits were found only in morbidly obese patients. Of 1630 patients in this study, there were four patients who had five or six trigger digits and they were obese or morbidly obese.

Table 3. The number of trigger digit and BMI.

Number of Trigger digit	BMI					Total (case (%))
	Slender	Medium	Over weight	Obese	Morbidly Obese	
right hand						
none	68(11.1)	265(43.4)	232(38.0)	43(7.0)	2(0.3)	610(100.0)
1 digit	125(13.4)	390(41.8)	353(37.9)	60(6.4)	4(0.4)	932(100.0)
2 digits	8(10.7)	21(28.0)	39(52.0)	5(6.7)	2(2.7)	75(100.0)
3 digits	-	-	-	6(54.5)	5(45.5)	11(100.0)
4 digits	-	-	-	-	1(100.0)	1(100.0)
5 digits	-	-	-	-	1(100.0)	1(100.0)
left hand						
none	103(13.0)	336(42.5)	300(38.0)	43(5.4)	8(1.0)	790(100.0)
1 digit	96(12.7)	298(39.5)	293(38.8)	65(8.6)	3(0.4)	755(100.0)
2 digits	2(2.6)	42(53.8)	31(39.7)	2(2.6)	1(1.3)	78(100.0)
3 digits	-	-	-	4(57.1)	3(42.9)	7(100.0)
both hands						
1 digit	162(12.7)	548(42.9)	486(38.0)	82(6.4)	-	1278(100.0)
2 digits	38(12.7)	121(40.3)	117(39.0)	18(6.0)	6(2.0)	300(100.0)
3 digits	1(2.8)	4(11.1)	18(50.0)	8(22.2)	5(13.9)	36(100.0)
4 digits	-	3(25.0)	3(25.0)	4(33.3)	2(16.7)	12(100.0)
5 digits	-	-	-	1(50.0)	1(50.0)	2(100.0)
6 digits	-	-	-	1(50.0)	1(50.0)	2(100.0)

DISCUSSION

In this study, the ratio of female to male patients (6:1) was higher than that reported in the literature[3,9]. The average age of the patients was the same as other studies[3,5,9]. The middle digit of the right hand was the most frequently affected [3,10], but in this study, the right thumb was the most common involved digit. The index and little fingers were relatively spared as described by Blyth[3].

The mean BMI of the patients was 24.935 and classified as upper medium. More than two trigger digits in one hand or more than four trigger digits in both hands were found only in the obese and morbidly obese patients. The more BMI the patients had, the greater the number of trigger digits was.

The common associated conditions with trigger digit were exclusive criteria of the studied patients. A further controlled study may be needed to justify the exact relationship of trigger digit and BMI. If BMI is a risk factor of trigger digit, weight control will probably prevent this common condition.

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การศึกษาผู้ป่วยโรคทริกเกอร์ ดิจิท จำนวน 1,630 ราย ระหว่างปีพ.ศ. 2535 ถึงพ.ศ. 2541 พบว่าอัตราส่วนของผู้ป่วยเพศหญิงต่อเพศชายมีค่าเท่ากับหกต่อหนึ่ง ผู้ป่วยมีอายุเฉลี่ย 51.8 ปี โรคดังกล่าวพบมากที่สุดบริเวณนิ้วหัวแม่มือและพบได้น้อยในบริเวณนิ้วนางและนิ้วก้อย ผู้ป่วยที่เป็นโรคดังกล่าวมากกว่าสองนิ้วในมือข้างเดียวกันหรือมากกว่าสี่นิ้วในมือทั้งสองข้างพบได้เฉพาะในผู้ป่วยที่มีค่าดัชนีมวลร่างกายในระดับอ้วนหรืออ้วนผิดปกติเท่านั้น

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